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(54) Title: GENES, COMPOSITIONS, KITS, AND METHOD FOR IDENTIFICATION, ASSESSMENT, PREVENTION AND THERAPY OF OVARIAN CANCER

(57) Abstract: The invention relates to compositions, kits, and methods for detecting, characterizing, preventing, and treating human ovarian cancers. A variety of novel markers are provided, wherein changes in the levels of expression of one or more of the markers is correlated with the presence of ovarian cancer.

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COMPOSITIONS, KITS, AND METHODS FOR
IDENTIFICATION, ASSESSMENT, PREVENTION, AND THERAPY OF
OVARIAN CANCER

RELATED APPLICATIONS

The present application claims priority to U.S. provisional patent application serial no. 60/191,031 filed on March 21, 2000, U.S. provisional patent application serial no. 60/207,124, filed on May 25, 2000, U.S. provisional patent application serial no. 60/211,940, filed on June 15, 2000, U.S. provisional patent application serial no. 60/216,820, filed on July 7, 2000, U.S. provisional patent application serial no. 60/220,661, filed on July 25, 2000, and U.S. provisional patent application serial no. 60/257,672, filed on December 21, 2000, all of which are expressly incorporated by reference.

FIELD OF THE INVENTION

The field of the invention is ovarian cancer, including diagnosis, characterization, management, and therapy of ovarian cancer.

BACKGROUND OF THE INVENTION

Ovarian cancer is responsible for significant morbidity and mortality in populations around the world. Ovarian cancer is classified, on the basis of clinical and pathological features, in three groups, namely epithelial ovarian cancer (EOC; >90% of ovarian cancer in Western countries), germ cell tumors (*circa* 2-3% of ovarian cancer), and stromal ovarian cancer (*circa* 5% of ovarian cancer; Ozols *et al.*, 1997, *Cancer Principles and Practice of Oncology*, 5th ed., DeVita *et al.*, Eds. pp. 1502). Relative to EOC, germ cell tumors and stromal ovarian cancers are more easily detected and treated at an early stage, translating into higher/better survival rates for patients afflicted with these two types of ovarian cancer.

There are numerous types of ovarian tumors, some of which are benign, and others of which are malignant. Treatment (including non-treatment) options and predictions of patient outcome depend on accurate classification of the ovarian cancer. Ovarian cancers are named according to the type of cells from which the cancer is

derived and whether the ovarian cancer is benign or malignant. Recognized histological tumor types include, for example, serous, mucinous, endometrioid, and clear cell tumors. In addition, ovarian cancers are classified according to recognized grade and ·stage scales.

In grade I, the tumor tissue is well differentiated from normal ovarian tissue. In grade II, tumor tissue is moderately well differentiated. In grade III, the tumor tissue is poorly differentiated from normal tissue, and this grade correlates with a less favorable prognosis than grades I and II. Stage I is generally confined within the capsule surrounding one (stage IA) or both (stage IB) ovaries, although in some stage I (*i.e.* stage IC) cancers, malignant cells may be detected in ascites, in peritoneal rinse fluid, or on the surface of the ovaries. Stage II involves extension or metastasis of the tumor from one or both ovaries to other pelvic structures. In stage IIA, the tumor extends or has metastasized to the uterus, the fallopian tubes, or both. Stage IIB involves extension of the tumor to the pelvis. Stage IIC is stage IIA or IIB in which malignant cells may be detected in ascites, in peritoneal rinse fluid, or on the surface of the ovaries. In stage III, the tumor comprises at least one malignant extension to the small bowel or the· omentum, has formed extrapelvic peritoneal implants of microscopic (stage IIIA) or macroscopic (< 2 centimeter diameter, stage IIIB; > 2 centimeter diameter, stage IIIC) size, or has metastasized to a retroperitoneal or inguinal lymph node (an alternate indicator of stage IIIC). In stage IV, distant (*i.e.* non-peritoneal) metastases of the tumor can be detected.

The durations of the various stages of ovarian cancer are not presently known, but are believed to be at least about a year each (Richart *et al.*, 1969, *Am. J. Obstet. Gynecol.* 105:386). Prognosis declines with increasing stage designation. For example, 5-year survival rates for patients diagnosed with stage I, II, III, and IV ovarian cancer are 80%, 57%, 25%, and 8%, respectively.

Despite being the third most prevalent gynecological cancer, ovarian cancer is the leading cause of death among those afflicted with gynecological cancers. The disproportionate mortality of ovarian cancer is attributable to a substantial absence of symptoms among those afflicted with early-stage ovarian cancer and to difficulty diagnosing ovarian cancer at an early stage. Patients afflicted with ovarian cancer most often present with non-specific complaints, such as abnormal vaginal bleeding,

gastrointestinal symptoms, urinary tract symptoms, lower abdominal pain, and generalized abdominal distension. These patients rarely present with paraneoplastic symptoms or with symptoms which clearly indicate their affliction. Presently, less than about 40% of patients afflicted with ovarian cancer present with stage I or stage II.

5   Management of ovarian cancer would be significantly enhanced if the disease could be detected at an earlier stage, when treatments are much more generally efficacious.

Ovarian cancer may be diagnosed, in part, by collecting a routine medical history from a patient and by performing physical examination, x-ray examination, and chemical and hematological studies on the patient. Hematological tests which may be

10   indicative of ovarian cancer in a patient include analyses of serum levels of proteins designated CA125 and DF3 and plasma levels of lysophosphatidic acid (LPA). Palpation of the ovaries and ultrasound techniques (particularly including endovaginal ultrasound and color Doppler flow ultrasound techniques) can aid detection of ovarian tumors and differentiation of ovarian cancer from benign ovarian cysts. However, a

15   definitive diagnosis of ovarian cancer typically requires performing exploratory laparotomy of the patient.

Potential tests for the detection of ovarian cancer (e.g., screening, reflex or monitoring) may be characterized by a number of factors. The "sensitivity" of an assay refers to the probability that the test will yield a positive result in an individual afflicted

20   with ovarian cancer. The "specificity" of an assay refers to the probability that the test will yield a negative result in an individual not afflicted with ovarian cancer. The "positive predictive value" (PPV) of an assay is the ratio of true positive results (i.e. positive assay results for patients afflicted with ovarian cancer) to all positive results (i.e. positive assay results for patients afflicted with ovarian cancer + positive assay

25   results for patients not afflicted with ovarian cancer). It has been estimated that in order for an assay to be an appropriate population-wide screening tool for ovarian cancer the assay must have a PPV of at least about 10% (Rosenthal et al., 1998, Sem. Oncol. 25:315-325). It would thus be desirable for a screening assay for detecting ovarian cancer in patients to have a high sensitivity and a high PPV. Monitoring and reflex tests

30   would also require appropriate specifications.

Owing to the cost, limited sensitivity, and limited specificity of known methods of detecting ovarian cancer, screening is not presently performed for the general population. In addition, the need to perform laparotomy in order to diagnose ovarian cancer in patients who screen positive for indications of ovarian cancer limits the

5   desirability of population-wide screening, such that a PPV even greater than 10% would be desirable.

Prior use of serum CA125 level as a diagnostic marker for ovarian cancer indicated that this method exhibited insufficient specificity for use as a general screening method. Use of a refined algorithm for interpreting CA125 levels in serial

10   retrospective samples obtained from patients improved the specificity of the method without shifting detection of ovarian cancer to an earlier stage (Skakes, 1995, *Cancer* 76:2004). Screening for LPA to detect gynecological cancers including ovarian cancer exhibited a sensitivity of about 96% and a specificity of about 89%. However, CA125-based screening methods and LPA-based screening methods are hampered by the

15   presence of CA125 and LPA, respectively, in the serum of patients afflicted with conditions other than ovarian cancer. For example, serum CA125 levels are known to be associated with menstruation, pregnancy, gastrointestinal and hepatic conditions such as colitis and cirrhosis, pericarditis, renal disease, and various non-ovarian malignancies. Serum LPA is known, for example, to be affected by the presence of non-ovarian

20   gynecological malignancies. A screening method having a greater specificity for ovarian cancer than the current screening methods for CA125 and LPA could provide a population-wide screening for early stage ovarian cancer.

Presently greater than about 60% of ovarian cancers diagnosed in patients are stage III or stage IV cancers. Treatment at these stages is largely limited to

25   cytoreductive surgery (when feasible) and chemotherapy, both of which aim to slow the spread and development of metastasized tumor. Substantially all late stage ovarian cancer patients currently undergo combination chemotherapy as primary treatment, usually a combination of a platinum compound and a taxane. Median survival for responding patients is about one year. Combination chemotherapy involving agents

30   such as doxorubicin, cyclophosphamide, cisplatin, hexamethylmelamine, paclitaxel, and methotrexate may improve survival rates in these groups, relative to single-agent therapies. Various recently-developed chemotherapeutic agents and treatment regimens

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have also demonstrated usefulness for treatment of advanced ovarian cancer. For example, use of the topoisomerase I inhibitor topectan, use of amifostine to minimize chemotherapeutic side effects, and use of intraperitoneal chemotherapy for patients having peritoneally implanted tumors have demonstrated at least limited utility.

5   Presently, however, the 5-year survival rate for patients afflicted with stage III ovarian cancer is 25%, and the survival rate for patients afflicted with stage IV ovarian cancer is 8%.

In summary, the earlier ovarian cancer is detected, the aggressiveness of therapeutic intervention and the side effects associated with therapeutic intervention are

10   minimized. More importantly, the earlier the cancer is detected, the survival rate and quality of life of ovarian cancer patients is enhanced. Thus, a pressing need exists for methods of detecting ovarian cancer as early as possible. There also exists a need for methods of detecting recurrence of ovarian cancer as well as methods for predicting and monitoring the efficacy of treatment. The present invention satisfies these needs.

15

SUMMARY OF THE INVENTION

The invention relates to novel genes associated with ovarian cancer as well as methods of assessing whether a patient is afflicted with ovarian cancer. This method comprises the step of comparing the level of expression of a marker in a patient sample,

20   wherein the marker is listed in Tables 1-2, and the normal level of expression of the marker in a control, e.g., a sample from a patient without ovarian cancer. A significant difference between the level of expression of the marker in the patient sample and the normal level is an indication that the patient is afflicted with ovarian cancer. Preferably, a protein corresponding to the marker is a secreted protein. Alternatively, the marker

25   can correspond to a protein having an extracellular portion, to one which is normally expressed in ovarian tissue at a detectable level, or both.

In one method, the marker(s) are preferably selected such that the positive predictive value of the method is at least about 10%. Also preferred are embodiments of the method wherein the marker is over- or under-expressed by at least two-fold in at

30   least about 20% of stage I ovarian cancer patients, stage II ovarian cancer patients, stage III ovarian cancer patients, stage IV ovarian cancer patients, grade I ovarian cancer patients, grade II ovarian cancer patients, grade III ovarian cancer patients, epithelial

ovarian cancer patients, stromal ovarian cancer patients, germ cell ovarian cancer patients, malignant ovarian cancer patients, benign ovarian patients, serous neoplasm ovarian cancer patients, mucinous neoplasm ovarian cancer patients, endometrioid neoplasm ovarian cancer patients and/or clear cell neoplasm ovarian cancer patients.

5   In one embodiment of the methods of the present invention, the patient sample is an ovary-associated body fluid. Such fluids include, for example, blood fluids, lymph, ascitic fluids, gynecological fluids, cystic fluids, urine, and fluids collected by peritoneal rinsing. In another embodiment, the sample comprises cells obtained from the patient. In this embodiment, the cells may be found in a fluid selected from the group consisting

10   of a fluid collected by peritoneal rinsing, a fluid collected by uterine rinsing, a uterine fluid, a uterine exudate, a pleural fluid, and an ovarian exudate. In another embodiment, the patient sample is *in vivo*.

          In accordance with the methods of the present invention, the level of expression of the marker in a sample can be assessed, for example, by detecting the presence in the

15   sample of :

          • a protein corresponding to the marker or fragment of the protein (*e.g.* using a reagent, such as an antibody, an antibody derivative, or an antibody fragment, which binds specifically with the protein)

          • a transcribed polynucleotide (*e.g.* an mRNA or a cDNA), or fragment

20   thereof, having at least a portion with which the marker is substantially homologous (*e.g.* by contacting a mixture of transcribed polynucleotides obtained from the sample with a substrate having one or more of the markers listed in Tables 1-2 fixed thereto at selected positions)

          • a transcribed polynucleotide or fragment thereof, wherein the

25   polynucleotide anneals with the marker under stringent hybridization conditions.

          • a metabolite which is produced directly (*i.e.*, catalyzed) or indirectly by a protein corresponding to the marker

          The methods of the present invention are particularly useful for patients with an

30   identified pelvic mass or symptoms associated with ovarian cancer. The methods of the present invention can also be of particular use with patients having an enhanced risk of developing ovarian cancer (*e.g.*, patients having a familial history of ovarian cancer,

patients identified as having a mutant oncogene, and patients at least about 50 years of age). The methods of the present invention may further be of particular use in monitoring the efficacy of treatment of an ovarian cancer patient (*e.g.* the efficacy of chemotherapy).

5   The methods of the present invention may be performed using a plurality (*e.g.* 2, 3, 5, or 10 or more) of markers. According to a method involving a plurality of markers, the level of expression in the sample of each of a plurality of markers independently selected from the markers listed in Tables 1-2 is compared with the normal level of expression of each of the plurality of markers in samples of the same type obtained from
10   control humans not afflicted with ovarian cancer. The markers of Tables 1-2 may also be used in combination with known ovarian cancer markers in the methods of the present invention.

In a preferred method of assessing whether a patient is afflicted with ovarian cancer (*e.g.*, new detection ("screening"), detection of recurrence, reflex testing), the
15   method comprises comparing:

a) the level of expression of a marker in a patient sample, wherein at least one marker is selected from the markers of Tables 1-2, and

b) the normal level of expression of the marker in a control non-ovarian cancer sample.

20   A significant difference between the level of expression of the marker in the patient sample and the normal level is an indication that the patient is afflicted with ovarian cancer.

The methods of the present invention further include a method of assessing the efficacy of a test compound for inhibiting ovarian cancer in a patient. This method
25   comprises comparing:

a) expression of a marker in a first sample obtained from the patient and maintained in the presence of the test compound, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2, and

30   b) expression of the marker in a second sample obtained from the patient and maintained in the absence of the test compound.

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A significant difference between the level of expression of the marker in the first sample, relative to the second sample, is an indication that the test compound is efficacious for inhibiting ovarian cancer in the patient. For example, the first and second samples can be portions of a single sample obtained from the patient or portions of pooled samples obtained from the patient.

The invention further relates to a method of assessing the efficacy of a therapy for inhibiting ovarian cancer in a patient. This method comprises comparing:

a) expression of a marker in a first sample obtained from the patient prior to providing at least a portion of the therapy to the patient, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2, and

b) expression of the marker in a second sample obtained from the patient following provision of the portion of the therapy.

A significant difference between the level of expression of the marker in the second sample, relative to the first sample, is an indication that the therapy is efficacious for inhibiting ovarian cancer in the patient.

It will be appreciated that in these methods the "therapy" may be any traditional therapy for treating ovarian cancer including, but not limited to, chemotherapy, radiation therapy and surgical removal of tissue, e.g., an ovarian tumor. Thus, the methods of the invention may be used to evaluate a patient before, during and after thereapy, for example, to evaluate the reduction in tumor burden.

The present invention therefore further comprises a method for monitoring the progression of ovarian cancer in a patient, the method comprising:

a) detecting in a patient sample at a first time point, the expression of a marker, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2;

b) repeating step a) at a subsequent time point in time; and

c) comparing the level of expression detected in steps a) and b), and therefrom monitoring the progression of ovarian cancer in the patient.

The invention also includes a method of selecting a composition for inhibiting ovarian cancer in a patient. This method comprises the steps of:

a) obtaining a sample comprising cancer cells from the patient;

b) separately maintaining aliquots of the sample in the presence of a plurality of test compositions;

c) comparing expression of a marker listed in Tables 1-2 in each of the aliquots; and

5   d) selecting one of the test compositions which alters the level of expression of the marker in the aliquot containing that test composition, relative to other test compositions.

In addition, the invention includes a method of inhibiting ovarian cancer in a patient. This method comprises the steps of:

10   a) obtaining a sample comprising cancer cells from the patient;

b) separately maintaining aliquots of the sample in the presence of a plurality of test compositions;

c) comparing expression of a marker listed in Tables 1-2 in each of the aliquots; and

15   d) administering to the patient at least one of the test compositions which alters the level of expression of the marker in the aliquot containing that test composition, relative to other test compositions.

The invention also includes a kit for assessing whether a patient is afflicted with ovarian cancer. This kit comprises reagents for assessing expression of a marker listed
20   in Tables 1-2.

In another aspect, the invention relates to a kit for assessing the suitability of each of a plurality of compounds for inhibiting an ovarian cancer in a patient. The kit comprises a reagent for assessing expression of a marker listed in Tables 1-2, and may also comprise a plurality of compounds.

25   In another aspect, the invention relates to a kit for assessing the presence of ovarian cancer cells. This kit comprises an antibody, wherein the antibody binds specifically with a protein corresponding to a marker listed in Tables 1-2. The kit may also comprise a plurality of antibodies, wherein the plurality binds specifically with a protein corresponding to a different marker listed in Tables 1-2.

30   The invention also includes a kit for assessing the presence of ovarian cancer cells, wherein the kit comprises a nucleic acid probe. The probe binds specifically with a transcribed polynucleotide corresponding to a marker listed in Tables 1-2. The kit

may also comprise a plurality of probes, wherein each of the probes binds specifically with a transcribed polynucleotide corresponding to a different marker listed in Tables 1-2.

The invention further relates to a method of making an isolated hybridoma which produces an antibody useful for assessing whether a patient is afflicted with ovarian cancer. The method comprises isolating a protein corresponding to a marker listed in Tables 1-2, immunizing a mammal using the isolated protein, isolating splenocytes from the immunized mammal, fusing the isolated splenocytes with an immortalized cell line to form hybridomas, and screening individual hybridomas for production of an antibody which specifically binds with the protein to isolate the hybridoma. The invention also includes an antibody produced by this method.

The invention further includes a method of assessing the ovarian carcinogenic potential of a test compound. This method comprises the steps of:

a) maintaining separate aliquots of ovarian cells in the presence and absence of the test compound; and

b) comparing expression of a marker in each of the aliquots.

The marker is selected from those listed in Tables 1-2. A significantly altered level of expression of the marker in the aliquot maintained in the presence of (or exposed to) the test compound, relative to the aliquot maintained in the absence of the test compound, is an indication that the test compound possesses ovarian carcinogenic potential.

Additionally, the invention includes a kit for assessing the ovarian carcinogenic potential of a test compound. The kit comprises ovarian cells and a reagent for assessing expression of a marker in each of the aliquots. The marker is selected from those listed in Tables 1-2.

The invention further relates to a method of treating a patient afflicted with ovarian cancer or at risk of developing ovarian cancer. This method comprises enhancing expression of a marker listed in Tables 1-2 or providing to cells of the patient a protein corresponding to a marker listed in Tables 1-2, wherein the marker is underexpressed in patients afflicted with ovarian cancer. The protein can be provided to the cells, for example, by providing a vector comprising a polynucleotide encoding the protein to the cells.

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The invention includes another method of treating a patient afflicted with ovarian cancer or at risk of developing ovarian cancer. This method comprises inhibiting expression or overexpression of a marker listed in Tables 1-2 by, *e.g.*, providing to cells of the patient an antisense oligonucleotide complementary to a polynucleotide

5   corresponding to a marker listed in Tables 1-2, wherein the marker is overexpressed in patients afflicted with ovarian cancer.

It will be appreciated that the methods and kits of the present invention may also include known cancer markers including known ovarian cancer markers. It will further be appreciated that the methods and kits may be used to identify cancers other than

10   ovarian cancer.

DETAILED DESCRIPTION OF THE INVENTION

The invention relates to newly discovered genes associated with the cancerous state of ovarian cells. It has been discovered that the level of expression of individual

15   genes, also referred to as markers, and combinations of these genes, correlates with the presence of ovarian cancer in a patient. Methods are provided for detecting the presence of ovarian cancer in a sample, the absence of ovarian cancer in a sample, the stage of an ovarian cancer, and with other characteristics of ovarian cancer that are relevant to prevention, diagnosis, characterization, and therapy of ovarian cancer in a patient.

20

Definitions

As used herein, each of the following terms has the meaning associated with it in this section.

The articles "a" and "an" are used herein to refer to one or to more than one (*i.e.*

25   to at least one) of the grammatical object of the article. By way of example, "an element" means one element or more than one element.

A "marker" is a naturally-occurring polymer corresponding to at least one of the novel nucleic acids listed in Tables 1-2. For example, markers include, without limitation, sense and anti-sense strands of genomic DNA (*i.e.* including any introns

30   occurring therein), RNA generated by transcription of genomic DNA (*i.e.* prior to splicing), RNA generated by splicing of RNA transcribed from genomic DNA, and proteins generated by translation of spliced RNA (*i.e.* including proteins both before and

after cleavage of normally cleaved regions such as transmembrane signal sequences).
As used herein, "marker" may also include a cDNA made by reverse transcription of an
RNA generated by transcription of genomic DNA (including spliced RNA).

The term "probe" refers to any molecule which is capable of selectively binding
to a specifically intended target molecule, for example a marker of the invention.
Probes can be either synthesized by one skilled in the art, or derived from appropriate
biological preparations. For purposes of detection of the target molecule, probes may be
specifically designed to be labeled, as described herein. Examples of molecules that can
be utilized as probes include, but are not limited to, RNA, DNA, proteins, antibodies,
and organic monomers.

An "ovary-associated" body fluid is a fluid which, when in the body of a patient,
contacts or passes through ovarian cells or into which cells or proteins shed from
ovarian cells e.g. ovarian epithelium, are capable of passing. Exemplary ovary-
associated body fluids include blood fluids, lymph, ascites, gynecological fluids, cystic
fluid, urine, and fluids collected by peritoneal rinsing.

The "normal" level of expression of a marker is the level of expression of the
marker in ovarian cells of a patient, e.g. a human, not afflicted with ovarian cancer.

"Over-expression" and "under-expression" of a marker refer to expression of the
marker of a patient at a greater or lesser level, respectively, than normal level of
expression of the marker (e.g. at least two-fold greater or lesser level).

As used herein, the term "promoter/regulatory sequence" means a nucleic acid
sequence which is required for expression of a gene product operably linked to the
promoter/regulatory sequence. In some instances, this sequence may be the core
promoter sequence and in other instances, this sequence may also include an enhancer
sequence and other regulatory elements which are required for expression of the gene
product. The promoter/regulatory sequence may, for example, be one which expresses
the gene product in a tissue-specific manner.

A "constitutive" promoter is a nucleotide sequence which, when operably linked
with a polynucleotide which encodes or specifies a gene product, causes the gene
product to be produced in a living human cell under most or all physiological conditions
of the cell.

An "inducible" promoter is a nucleotide sequence which, when operably linked with a polynucleotide which encodes or specifies a gene product, causes the gene product to be produced in a living human cell substantially only when an inducer which corresponds to the promoter is present in the cell.

5   A "tissue-specific" promoter is a nucleotide sequence which, when operably linked with a polynucleotide which encodes or specifies a gene product, causes the gene product to be produced in a living human cell substantially only if the cell is a cell of the tissue type corresponding to the promoter.

A "transcribed polynucleotide" is a polynucleotide (*e.g.* an RNA, a cDNA, or an 10   analog of one of an RNA or cDNA) which is complementary to or homologous with all or a portion of a mature RNA made by transcription of a genomic DNA corresponding to a marker of the invention and normal post-transcriptional processing (*e.g.* splicing), if any, of the transcript.

"Complementary" refers to the broad concept of sequence complementarity 15   between regions of two nucleic acid strands or between two regions of the same nucleic acid strand. It is known that an adenine residue of a first nucleic acid region is capable of forming specific hydrogen bonds ("base pairing") with a residue of a second nucleic acid region which is antiparallel to the first region if the residue is thymine or uracil. Similarly, it is known that a cytosine residue of a first nucleic acid strand is capable of 20   base pairing with a residue of a second nucleic acid strand which is antiparallel to the first strand if the residue is guanine. A first region of a nucleic acid is complementary to a second region of the same or a different nucleic acid if, when the two regions are arranged in an antiparallel fashion, at least one nucleotide residue of the first region is capable of base pairing with a residue of the second region. Preferably, the first region 25   comprises a first portion and the second region comprises a second portion, whereby, when the first and second portions are arranged in an antiparallel fashion, at least about 50%, and preferably at least about 75%, at least about 90%, or at least about 95% of the nucleotide residues of the first portion are capable of base pairing with nucleotide residues in the second portion. More preferably, all nucleotide residues of the first 30   portion are capable of base pairing with nucleotide residues in the second portion.

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"Homologous" as used herein, refers to nucleotide sequence similarity between two regions of the same nucleic acid strand or between regions of two different nucleic acid strands. When a nucleotide residue position in both regions is occupied by the same nucleotide residue, then the regions are homologous at that position. A first region

5   is homologous to a second region if at least one nucleotide residue position of each region is occupied by the same residue. Homology between two regions is expressed in terms of the proportion of nucleotide residue positions of the two regions that are occupied by the same nucleotide residue. By way of example, a region having the nucleotide sequence 5'-ATTGCC-3' and a region having the nucleotide sequence 5'-

10   TATGGC-3' share 50% homology. Preferably, the first region comprises a first portion and the second region comprises a second portion, whereby, at least about 50%, and preferably at least about 75%, at least about 90%, or at least about 95% of the nucleotide residue positions of each of the portions are occupied by the same nucleotide residue. More preferably, all nucleotide residue positions of each of the portions are occupied by

15   the same nucleotide residue.

A marker is "fixed" to a substrate if it is covalently or non-covalently associated with the substrate such the substrate can be rinsed with a fluid (*e.g.* standard saline citrate, pH 7.4) without a substantial fraction of the marker dissociating from the substrate.

20   As used herein, a "naturally-occurring" nucleic acid molecule refers to an RNA or DNA molecule having a nucleotide sequence that occurs in nature (*e.g.* encodes a natural protein).

Expression of a marker in a patient is "significantly" higher or lower than the normal level of expression of a marker if the level of expression of the marker is greater

25   or less, respectively, than the normal level by an amount greater than the standard error of the assay employed to assess expression, and preferably at least twice, and more preferably three, four, five or ten times that amount. Alternately, expression of the marker in the patient can be considered "significantly" higher or lower than the normal level of expression if the level of expression is at least about two, and preferably at least

30   about three, four, or five times, higher or lower, respectively, than the normal level of expression of the marker.

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Ovarian cancer is "inhibited" if at least one symptom of the cancer is alleviated, terminated, slowed, or prevented. As used herein, ovarian cancer is also "inhibited" if recurrence or metastasis of the cancer is reduced, slowed, delayed, or prevented.

A kit is any manufacture (*e.g.* a package or container) comprising at least one
5 reagent, *e.g.* a probe, for specifically detecting a marker of the invention, the manufacture being promoted, distributed, or sold as a unit for performing the methods of the present invention.

Description

10   The present invention is based, in part, on identification of novel markers which are over-expressed in ovarian cancer cells as compared to their expression in normal (*i.e.* non- cancerous) ovarian cells. The markers of the invention correspond to DNA, RNA, and polypeptide molecules which can be detected in one or both of normal and cancerous ovarian cells. The enhanced expression of one or more of these markers in
15 ovarian cells is herein correlated with the cancerous state of the tissue. The invention thus includes compositions, kits, and methods for assessing the cancerous state of ovarian cells (*e.g.* cells obtained from a human, cultured human cells, archived or preserved human cells and *in vivo* cells).

The compositions, kits, and methods of the invention have the following uses,
20 among others:

    1)   assessing whether a patient is afflicted with ovarian cancer;

    2)   assessing the stage of ovarian cancer in a human patient;

    3)   assessing the grade of ovarian cancer in a patient;

    4)   assessing the benign or malignant nature of ovarian cancer in a patient;

25 5)   assessing the histological type of neoplasm (*e.g.* serous, mucinous,
                endometroid, or clear cell neoplasm) associated with ovarian
                cancer in a patient;

    6)   making an isolated hybridoma which produces an antibody useful for
                assessing whether a patient is afflicted with ovarian cancer;

30 7)   assessing the presence of ovarian cancer cells;

    8)   assessing the efficacy of one or more test compounds for inhibiting
                ovarian cancer in a patient;

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9)   assessing the efficacy of a therapy for inhibiting ovarian cancer in a
       patient;

10)   monitoring the progression of ovarian cancer in a patient;

11)   selecting a composition or therapy for inhibiting ovarian cancer in a
       patient;

12)   treating a patient afflicted with ovarian cancer;

13)   inhibiting ovarian cancer in a patient;

       14)   assessing the ovarian carcinogenic potential of a test compound;
              and

       15)   inhibiting an ovarian cancer in a patient at risk for developing
              ovarian cancer.

       The invention thus includes a method of assessing whether a patient is afflicted
with ovarian cancer. This method comprises comparing the level of expression of a
marker in a patient sample and the normal level of expression of the marker in a control,
e.g., a non-ovarian cancer sample. A significant difference between the level of
expression of the marker in the patient sample and the normal level is an indication that
the patient is afflicted with ovarian cancer. The marker is selected from the group
consisting of the markers listed in Tables 1-2.

       The polynucleotides set forth in Tables 1-2 represent previously unidentified
nucleotide sequences. These nucleotide sequences were identified through subtracted
library experiments described herein. Also provided by this invention are
polynucleotides that correspond to the polynucleotides of Tables 1-2. In one
embodiment, these polynucleotides are obtained by identification of a larger fragment or
full-length coding sequence of these polynucleotides. Gene delivery vehicles, host cells,
compositions and databases (all described herein) containing these polynucleotides are
also provided by this invention.

       Any marker or combination of markers listed in Tables 1-2, as well as any
known markers in combination with the markers set forth in Tables 1-2, may be used in
the compositions, kits, and methods of the present invention. In general, it is preferable
to use markers for which the difference between the level of expression of the marker in
ovarian cancer cells and the level of expression of the same marker in normal ovarian

cells is as great as possible. Although this difference can be as small as the limit of detection of the method for assessing expression of the marker, it is preferred that the difference be at least greater than the standard error of the assessment method, and preferably a difference of at least 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, 15-, 20-, 25-, 100-,

5   500-, 1000-fold or greater.

It is recognized that certain markers correspond to proteins which are secreted from ovarian cells (*i.e.* one or both of normal and cancerous cells) to the extracellular space surrounding the cells. These markers are preferably used in certain embodiments of the compositions, kits, and methods of the invention, owing to the fact that the protein

10   corresponding to each of these markers can be detected in an ovary-associated body fluid sample, which may be more easily collected from a human patient than a tissue biopsy sample. In addition, preferred *in vivo* techniques for detection of a protein corresponding to a marker of the invention include introducing into a subject a labeled antibody directed against the protein. For example, the antibody can be labeled with a

15   radioactive marker whose presence and location in a subject can be detected by standard imaging techniques.

It is a simple matter for the skilled artisan to determine whether any particular marker corresponds to a secreted protein. In order to make this determination, the protein corresponding to a marker is expressed in a test cell (*e.g.* a cell of an ovarian cell

20   line), extracellular fluid is collected, and the presence or absence of the protein in the extracellular fluid is assessed (*e.g.* using a labeled antibody which binds specifically with the protein).

The following is an example of a method which can be used to detect secretion of a protein corresponding to a marker of the invention. About 8×10^5 293T cells are

25   incubated at 37°C in wells containing growth medium (Dulbecco's modified Eagle's medium {DMEM} supplemented with 10% fetal bovine serum) under a 5% (v/v) CO_2, 95% air atmosphere to about 60-70% confluence. The cells are then transfected using a standard transfection mixture comprising 2 micrograms of DNA comprising an expression vector encoding the protein and 10 microliters of LipofectAMINE™

30   (GIBCO/BRL Catalog no. 18342-012) per well. The transfection mixture is maintained for about 5 hours, and then replaced with fresh growth medium and maintained in an air atmosphere. Each well is gently rinsed twice with DMEM which does not contain

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methionine or cysteine (DMEM-MC; ICN Catalog no. 16-424- 54). About 1 milliliter of DMEM-MC and about 50 microcuries of Trans-^{35}S™ reagent (ICN Catalog no. 51006) are added to each well. The wells are maintained under the 5% CO_2 atmosphere described above and incubated at 37°C for a selected period. Following incubation, 150

5   microliters of conditioned medium is removed and centrifuged to remove floating cells and debris. The presence of the protein in the supernatant is an indication that the protein is secreted.

Examples of ovary-associated body fluids include blood fluids (*e.g.* whole blood, blood serum, blood having platelets removed therefrom, etc.), lymph, ascitic fluids,

10   gynecological fluids (*e.g.* ovarian, fallopian, and uterine secretions, menses, vaginal douching fluids, fluids used to rinse cervical cell samples, etc.), cystic fluid, urine, and fluids collected by peritoneal rinsing (*e.g.* fluids applied and collected during laparoscopy or fluids instilled into and withdrawn from the peritoneal cavity of a human patient). In these embodiments, the level of expression of the marker can be assessed by

15   assessing the amount (*e.g.* absolute amount or concentration) of the marker in an ovary- associated body fluid obtained from a patient. The fluid can, of course, be subjected to a variety of well-known post-collection preparative and storage techniques (*e.g.* storage, freezing, ultrafiltration, concentration, evaporation, centrifugation, etc.) prior to assessing the amount of the marker in the fluid.

20   Many ovary-associated body fluids (*i.e.* usually excluding urine) can have ovarian cells, *e.g.* ovarian epithelium, therein, particularly when the ovarian cells are cancerous, and, more particularly, when the ovarian cancer is metastasizing. Cell-containing fluids which can contain ovarian cancer cells include, but are not limited to, peritoneal ascites, fluids collected by peritoneal rinsing, fluids collected by uterine

25   rinsing, uterine fluids such as uterine exudate and menses, pleural fluid, and ovarian exudates. Thus, the compositions, kits, and methods of the invention can be used to detect expression of markers corresponding to proteins having at least one portion which is displayed on the surface of cells which express it. Examples of such proteins are indicated in the Tables herein. Although not every protein having at least one cell-

30   surface portion is indicated in the Tables, it is a simple matter for the skilled artisan to determine whether the protein corresponding to any particular marker comprises a cell-surface protein. For example, immunological methods may be used to detect such

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proteins on whole cells, or well known computer-based sequence analysis methods (*e.g.*. the SIGNALP program; Nielsen *et al.*, 1997, *Protein Engineering* 10:1-6) may be used to predict the presence of at least one extracellular domain (*i.e.* including both secreted proteins and proteins having at least one cell-surface domain). Expression of a marker

5   corresponding to a protein having at least one portion which is displayed on the surface of a cell which expresses it may be detected without necessarily lysing the cell (*e.g.* using a labeled antibody which binds specifically with a cell-surface domain of the protein).

Expression of a marker of the invention may be assessed by any of a wide

10   variety of well known methods for detecting expression of a transcribed molecule or protein. Non-limiting examples of such methods include immunological methods for detection of secreted, cell-surface, cytoplasmic, or nuclear proteins, protein purification methods, protein function or activity assays, nucleic acid hybridization methods, nucleic acid reverse transcription methods, and nucleic acid amplification methods.

15   In a preferred embodiment, expression of a marker is assessed using an antibody (*e.g.* a radio-labeled, chromophore-labeled, fluorophore-labeled, or enzyme-labeled antibody), an antibody derivative (*e.g.* an antibody conjugated with a substrate or with the protein or ligand of a protein-ligand pair {*e.g.* biotin-streptavidin}), or an antibody fragment (*e.g.* a single-chain antibody, an isolated antibody hypervariable domain, etc.)

20   which binds specifically with a protein corresponding to the marker, such as the protein encoded by the open reading frame corresponding to the marker or such a protein which has undergone all or a portion of its normal post-translational modification.

In another preferred embodiment, expression of a marker is assessed by preparing mRNA/cDNA (*i.e.* a transcribed polynucleotide) from cells in a patient

25   sample, and by hybridizing the mRNA/cDNA with a reference polynucleotide which is a complement of a polynucleotide comprising the marker, and fragments thereof. cDNA can, optionally, be amplified using any of a variety of polymerase chain reaction methods prior to hybridization with the reference polynucleotide; preferably, it is not amplified. Expression of one or more markers can likewise be detected using

30   quantitative PCR to assess the level of expression of the marker(s). Alternatively, any of the many known methods of detecting mutations or variants (*e.g.* single nucleotide

polymorphisms, deletions, etc.) of a marker of the invention may be used to detect occurrence of a marker in a patient.

In a related embodiment, a mixture of transcribed polynucleotides obtained from the sample is contacted with a substrate having fixed thereto a polynucleotide

5 complementary to or homologous with at least a portion (*e.g.* at least 7, 10, 15, 20, 25, 30, 40, 50, 100, 500, or more nucleotide residues) of a marker of the invention. If polynucleotides complementary to or homologous with are differentially detectable on the substrate (*e.g.* detectable using different chromophores or fluorophores, or fixed to different selected positions), then the levels of expression of a plurality of markers can

10 be assessed simultaneously using a single substrate (*e.g.* a "gene chip" microarray of polynucleotides fixed at selected positions). When a method of assessing marker expression is used which involves hybridization of one nucleic acid with another, it is preferred that the hybridization be performed under stringent hybridization conditions.

Because the compositions, kits, and methods of the invention rely on detection of

15 a difference in expression levels of one or more markers of the invention, it is preferable that the level of expression of the marker is significantly greater than the minimum detection limit of the method used to assess expression in at least one of normal ovarian cells and cancerous ovarian cells.

It is understood that by routine screening of additional patient samples using one

20 or more of the markers of the invention, it will be realized that certain of the markers are over- or under-expressed in cancers of various types, including specific ovarian cancers, as well as other cancers such as breast cancer, cervical cancer, etc. For example, it will be confirmed that some of the markers of the invention are over- or under-expressed in most (*i.e.* 50% or more) or substantially all (*i.e.* 80% or more) of ovarian cancer.

25 Furthermore, it will be confirmed that certain of the markers of the invention are associated with ovarian cancer of various stages (*i.e.* stage I, II, III, and IV ovarian cancers, as well as subclassifications IA, IB, IC, IIA, IIB, IIC, IIIA, IIIB, and IIIC, using the FIGO Stage Grouping system for primary carcinoma of the ovary; 1987, *Am. J. Obstet. Gynecol.* 156:236), of various histologic subtypes (*e.g.* serous, mucinous,

30 endometroid, and clear cell subtypes, as well as subclassifications and alternate classifications adenocarcinoma, papillary adenocarcinoma, papillary cystadenocarcinoma, surface papillary carcinoma, malignant adenofibroma,

cystadenofibroma, adenocarcinoma, cystadenocarcinoma, adenoacanthoma, endometrioid stromal sarcoma, mesodermal (Müllerian) mixed tumor, mesonephroid tumor, malignant carcinoma, Brenner tumor, mixed epithelial tumor, and undifferentiated carcinoma, using the WHO/FIGO system for classification of malignant

5   ovarian tumors; Scully, *Atlas of Tumor Pathology*, 3d series, Washington DC), and various grades (*i.e.* grade I {well differentiated} , grade II {moderately well differentiated}, and grade III {poorly differentiated from surrounding normal tissue}). In addition, as a greater number of patient samples are assessed for expression of the markers of the invention and the outcomes of the individual patients from whom the

10   samples were obtained are correlated, it will also be confirmed that altered expression of certain of the markers of the invention are strongly correlated with malignant cancers and that altered expression of other markers of the invention are strongly correlated with benign tumors. The compositions, kits, and methods of the invention are thus useful for characterizing one or more of the stage, grade, histological type, and benign/malignant

15   nature of ovarian cancer in patients. In addition, these compositions, kits, and methods can be used to detect and differentiate epithelial, stromal, and germ cell ovarian cancers.

When the compositions, kits, and methods of the invention are used for characterizing one or more of the stage, grade, histological type, and benign/malignant nature of ovarian cancer in a patient, it is preferred that the marker or panel of markers

20   of the invention is selected such that a positive result is obtained in at least about 20%, and preferably at least about 40%, 60%, or 80%, and more preferably in substantially all patients afflicted with an ovarian cancer of the corresponding stage, grade, histological type, or benign/malignant nature. Preferably, the marker or panel of markers of the invention is selected such that a PPV of greater than about 10% is obtained for the

25   general population (more preferably coupled with an assay specificity greater than 99.5%).

When a plurality of markers of the invention are used in the compositions, kits, and methods of the invention, the level of expression of each marker in a patient sample can be compared with the normal level of expression of each of the plurality of markers

30   in non-cancerous samples of the same type, either in a single reaction mixture (*i.e.* using reagents, such as different fluorescent probes, for each marker) or in individual reaction mixtures corresponding to one or more of the markers. In one embodiment, a

significantly enhanced level of expression of more than one of the plurality of markers
in the sample, relative to the corresponding normal levels, is an indication that the
patient is afflicted with ovarian cancer. In another embodiment, a significantly lower
level of expression in the sample of each of the plurality of markers, relative to the
5   corresponding normal levels, is an indication that the patient is afflicted with ovarian
cancer. In yet another embodiment, a significantly enhanced level of expression of one
or more marks and a significantly lower level of expression of one or more markers in a
sample relative to the corresponding normal levels, is an indication that the patient is
afflicted with ovarian cancer. When a plurality of markers is used, it is preferred that 2,
10   3, 4, 5, 8, 10, 12, 15, 20, 30, or 50 or more individual markers be used, wherein fewer
markers are preferred.

In order to maximize the sensitivity of the compositions, kits, and methods of the
invention (*i.e.* by interference attributable to cells of non-ovarian origin in a patient
sample), it is preferable that the marker of the invention used therein be a marker which
15   has a restricted tissue distribution, *e.g.,* normally not expressed in a non-epithelial tissue,
and more preferably a marker which is normally not expressed in a non-ovarian tissue.

Only a small number of markers are known to be associated with ovarian cancers
(*e.g. AKT2, Ki-RAS, ERBB2, c-MYC, RB1,* and *TP53*; Lynch, *supra*). These markers are
not, of course, included among the markers of the invention, although they may be used
20   together with one or more markers of the invention in a panel of markers, for example.
It is well known that certain types of genes, such as oncogenes, tumor suppressor genes,
growth factor-like genes, protease-like genes, and protein kinase-like genes are often
involved with development of cancers of various types. Thus, among the markers of the
invention, use of those which correspond to proteins which resemble known proteins
25   encoded by known oncogenes and tumor suppressor genes, and those which correspond
to proteins which resemble growth factors, proteases, and protein kinases are preferred.

Known oncogenes and tumor suppressor genes include, for example, *abl, abr,
akt2, apc, bcl2α, bcl2β, bcl3, bcr, brca1, brca2, cbl, ccnd1, cdc42, cdk4, crk- II,
csf1r/fms, dbl, dcc, dpc4/smad4, e-cad, e2f1/rbap, egfr/erbb-1, elk1, elk3, eph, erg, ets1,*
30   *ets2, fer, fgr/src2, fli1/ergb2, fos, fps/fes, fra1, fra2, fyn, hck, hek, her2/erbb- 2/neu,
her3/erbb-3, her4/erbb-4, hras1, hst2, hstf1, igfbp2, ink4a, ink4b, int2/fgf3, jun, junb,
jund, kip2, kit, kras2a, kras2b, lck, lyn, mas, max, mcc, mdm2, met, mlh1, mmp10, mos,*

msh2, msh3, msh6, myb, myba, mybb, myc, mycl1, mycn, nf1, nf2, nme2, nras, p53,

pdgfb, phb, piml, pms1, pms2, ptc, pten, raf1, rap1a, rb1, rel, ret, ros1, ski, src1, tal1,

tgfbr2, tgfb3, tgfbr3, thra1, thrb, tiam1, timp3, tjp1, tp53, trk, vav, vhl, vil2, waf1, wnt1,

wnt2, wtl, and *yes1* (Hesketh, 1997, In: *The Oncogene and Tumour Suppressor Gene*

5   *Facts Book,* 2nd Ed., Academic Press; Fishel *et al.,* 1994, *Science* 266:1403-1405).

Known growth factors include platelet-derived growth factor alpha, platelet-derived growth factor beta (simian sarcoma viral {v-sis} oncogene homolog), thrombopoietin (myeloproliferative leukemia virus oncogene ligand, megakaryocyte growth and development factor), erythropoietin, B cell growth factor, macrophage

10   stimulating factor 1 (hepatocyte growth factor-like protein), hepatocyte growth factor (hepapoietin A), insulin-like growth factor 1 (somatomedia C), hepatoma-derived growth factor, amphiregulin (schwannoma-derived growth factor), bone morphogenetic proteins 1, 2, 3, 3 beta, and 4, bone morphogenetic protein 7 (osteogenic protein 1), bone morphogenetic protein 8 (osteogenic protein 2), connective tissue growth factor,

15   connective tissue activation peptide 3, epidermal growth factor (EGF), teratocarcinoma-derived growth factor 1, endothelin, endothelin 2, endothelin 3, stromal cell-derived factor 1, vascular endothelial growth factor (VEGF), VEGF-B, VEGF-C, placental growth factor (vascular endothelial growth factor-related protein), transforming growth factor alpha, transforming growth factor beta 1 and its precursors, transforming growth

20   factor beta 2 and its precursors, fibroblast growth factor 1 (acidic), fibroblast growth factor 2 (basic), fibroblast growth factor 5 and its precursors, fibroblast growth factor 6 and its precursors, fibroblast growth factor 7 (keratinocyte growth factor), fibroblast growth factor 8 (androgen-induced), fibroblast growth factor 9 (glia-activating factor), pleiotrophin (heparin binding growth factor 8, neurite growth-promoting factor 1),

25   brain-derived neurotrophic factor, and recombinant glial growth factor 2.

Known proteases include interleukin-1 beta convertase and its precursors, Mch6 and its precursors, Mch2 isoform alpha, Mch4, Cpp32 isoform alpha, Lice2 gamma cysteine protease, Ich-1S, Ich-1L, Ich-2 and its precursors, TY protease, matrix metalloproteinase 1 (interstitial collagenase), matrix metalloproteinase 2 (gelatinase A,

30   72kD gelatinase, 72kD type IV collagenase), matrix metalloproteinase 7 (matrilysin), matrix metalloproteinase 8 (neutrophil collagenase), matrix metalloproteinase 12 (macrophage elastase), matrix metalloproteinase 13 (collagenase 3), metallopeptidase 1,

cysteine-rich metalloprotease (disintegrin) and its precursors, subtilisin-like protease Pc8
and its precursors, chymotrypsin, snake venom-like protease, cathepsin l, cathepsin D
(lysosomal aspartyl protease), stromelysin, aminopeptidase N, plasminogen, tissue
plasminogen activator, plasminogen activator inhibitor type II, and urokinase-type
5   plasminogen activator.

          Known protein kinases include DAP kinase, serine/threonine protein kinases
NIK, PK428, Krs-2, SAK, and EMK, interferon-inducible double stranded RNA
dependent protein kinase, FAST kinase, AIM1, IPL1-like midbody-associated protein
kinase-1, NIMA-like protein kinase 1 (NLK1), the cyclin-dependent kinases (cdk1-10),
10   checkpoint kinase Chk1, Nek3 protein kinase, BMK1 beta kinase, Clk1, Clk2, Clk3,
extracellular signal-regulated kinases 1, 3, and 6, cdc28 protein kinase 1, cdc28 protein
kinase 2, pLK, Myt1, c-Jun N-terminal kinase 2, Cam kinase 1, the MAP kinases,
insulin-stimulated protein kinase 1, beta-adrenergic receptor kinase 2, ribosomal protein
S6 kinase, kinase suppressor of ras-1 (KSR1), putative serine/threonine protein kinase
15   Prk, PkB kinase, cAMP-dependent protein kinase, cGMP-dependent protein kinase, type
II cGMP-dependent protein kinase, protein kinases Dyrk2, Dyrk3, and Dyrk4, Rho-
associated coiled-coil containing protein kinase p160ROCK, protein tyrosine kinase t-
Ror1, Ste20-related kinases, cell adhesion kinase beta, protein kinase 3, stress-activated
protein kinase 4, protein kinase Zpk, serine kinase hPAK65, dual specificity mitogen-
20   activated protein kinases 1 and 2, casein kinase I gamma 2, p21-activated protein kinase
Pak1, lipid-activated protein kinase PRK2, focal adhesion kinase, dual-specificity
tyrosine-phosphorylation regulated kinase, myosin light chain kinase, serine kinases
SRPK2, TESK1, and VRK2, B lymphocyte serine/threonine protein kinase, stress-
activated protein kinases JNK1 and JNK2, phosphorylase kinase, protein tyrosine kinase
25   Tec, Jak2 kinase, protein kinase Ndr, MEK kinase 3, SHB adaptor protein (a Src
homology 2 protein), agammaglobulinaemia protein-tyrosine kinase (Atk), protein
kinase ATR, guanylate kinase 1, thrombopoeitin receptor and its precursors, DAG
kinase epsilon, and kinases encoded by oncogenes or viral oncogenes such as v-fgr
(Gardner-Rasheed), v-abl (Abelson murine leukemia viral oncogene homolog 1), v-arg
30   (Abelson murine leukemia viral oncogene homolog, Abelson-related gene), v-fes and v-
fps (feline sarcoma viral oncogene and Fujinami avian sarcoma viral oncogene
homologs), proto-oncogene c-cot, oncogene pim-1, and oncogene mas1.

It is recognized that the compositions, kits, and methods of the invention will be of particular utility to patients having an enhanced risk of developing ovarian cancer and their medical advisors. Patients recognized as having an enhanced risk of developing ovarian cancer include, for example, patients having a familial history of ovarian cancer,

5   patients identified as having a mutant oncogene (*i.e.* at least one allele), and patients of advancing age (*i.e.* women older than about 50 or 60 years).

The level of expression of a marker in normal (*i.e.* non-cancerous) human ovarian tissue can be assessed in a variety of ways. In one embodiment, this normal level of expression is assessed by assessing the level of expression of the marker in a

10   portion of ovarian cells which appears to be non-cancerous and by comparing this normal level of expression with the level of expression in a portion of the ovarian cells which is suspected of being cancerous. For example, when laparoscopy or other medical procedure, reveals the presence of a lump on one portion of a patient's ovary, but not on another portion of the same ovary or on the other ovary, the normal level of

15   expression of a marker may be assessed using one or both or the non-affected ovary and a non-affected portion of the affected ovary, and this normal level of expression may be compared with the level of expression of the same marker in an affected portion (*i.e.* the lump) of the affected ovary. Alternately, and particularly as further information becomes available as a result of routine performance of the methods described herein,

20   population-average values for normal expression of the markers of the invention may be used. In other embodiments, the 'normal' level of expression of a marker may be determined by assessing expression of the marker in a patient sample obtained from a non-cancer-afflicted patient, from a patient sample obtained from a patient before the suspected onset of ovarian cancer in the patient, from archived patient samples, and the

25   like.

The invention includes compositions, kits, and methods for assessing the presence of ovarian cancer cells in a sample (*e.g.* an archived tissue sample or a sample obtained from a patient). These compositions, kits, and methods are substantially the same as those described above, except that, where necessary, the compositions, kits, and

30   methods are adapted for use with samples other than patient samples. For example, when the sample to be used is a parafinized, archived human tissue sample, it can be necessary to adjust the ratio of compounds in the compositions of the invention, in the

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kits of the invention, or the methods used to assess levels of marker expression in the sample. Such methods are well known in the art and within the skill of the ordinary artisan.

The invention includes a kit for assessing the presence of ovarian cancer cells

5 (*e.g.* in a sample such as a patient sample). The kit comprises a plurality of reagents, each of which is capable of binding specifically with a nucleic acid or polypeptide corresponding to a marker of the invention. Suitable reagents for binding with a polypeptide corresponding to a marker of the invention include antibodies, antibody derivatives, antibody fragments, and the like. Suitable reagents for binding with a

10 nucleic acid (*e.g.* a genomic DNA, an mRNA, a spliced mRNA, a cDNA, or the like) include complementary nucleic acids. For example, the nucleic acid reagents may include oligonucleotides (labeled or non-labeled) fixed to a substrate, labeled oligonucleotides not bound with a substrate, pairs of PCR primers, molecular beacon probes, and the like.

15 The kit of the invention may optionally comprise additional components useful for performing the methods of the invention. By way of example, the kit may comprise fluids (*e.g.* SSC buffer) suitable for annealing complementary nucleic acids or for binding an antibody with a protein with which it specifically binds, one or more sample compartments, an instructional material which describes performance of a method of the

20 invention, a sample of normal ovarian cells, a sample of ovarian cancer cells, and the like.

The invention also includes a method of making an isolated hybridoma which produces an antibody useful for assessing whether patient is afflicted with an ovarian cancer. In this method, a protein corresponding to a marker of the invention is isolated

25 (*e.g.* by purification from a cell in which it is expressed or by transcription and translation of a nucleic acid encoding the protein *in vivo* or *in vitro* using known methods). A vertebrate, preferably a mammal such as a mouse, rat, rabbit, or sheep, is immunized using the isolated protein. The vertebrate may optionally (and preferably) be immunized at least one additional time with the isolated protein, so that the vertebrate

30 exhibits a robust immune response to the protein. Splenocytes are isolated from the immunized vertebrate and fused with an immortalized cell line to form hybridomas, using any of a variety of methods well known in the art. Hybridomas formed in this

manner are then screened using standard methods to identify one or more hybridomas which produce an antibody which specifically binds with the protein. The invention also includes hybridomas made by this method and antibodies made using such hybridomas.

The invention also includes a method of assessing the efficacy of a test compound for inhibiting ovarian cancer cells. As described above, differences in the level of expression of the markers of the invention correlate with the cancerous state of ovarian cells. Although it is recognized that changes in the levels of expression of certain of the markers of the invention likely result from the cancerous state of ovarian cells, it is likewise recognized that changes in the levels of expression of other of the markers of the invention induce, maintain, and promote the cancerous state of those cells. Thus, compounds which inhibit an ovarian cancer in a patient will cause the level of expression of one or more of the markers of the invention to change to a level nearer the normal level of expression for that marker (*i.e.* the level of expression for the marker in non-cancerous ovarian cells).

This method thus comprises comparing expression of a marker in a first ovarian cell sample and maintained in the presence of the test compound and expression of the marker in a second ovarian cell sample and maintained in the absence of the test compound. A significant alteration in the level of expression of a marker listed in Tables 1-2 is an indication that the test compound inhibits ovarian cancer. The ovarian cell samples may, for example, be aliquots of a single sample of normal ovarian cells obtained from a patient, pooled samples of normal ovarian cells obtained from a patient, cells of a normal ovarian cell line, aliquots of a single sample of ovarian cancer cells obtained from a patient, pooled samples of ovarian cancer cells obtained from a patient, cells of an ovarian cancer cell line, or the like. In one embodiment, the samples are ovarian cancer cells obtained from a patient and a plurality of compounds known to be effective for inhibiting various ovarian cancers are tested in order to identify the compound which is likely to best inhibit the ovarian cancer in the patient.

This method may likewise be used to assess the efficacy of a therapy for inhibiting ovarian cancer in a patient. In this method, the level of expression of one or more markers of the invention in a pair of samples (one subjected to the therapy, the other not subjected to the therapy) is assessed. As with the method of assessing the

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efficacy of test compounds, if the therapy induces a significant alteration in the level of expression of a marker listed in Tables 1-2 then the therapy is efficacious for inhibiting ovarian cancer. As above, if samples from a selected patient are used in this method, then alternative therapies can be assessed *in vitro* in order to select a therapy most likely

5   to be efficacious for inhibiting ovarian cancer in the patient.

As described herein, ovarian cancer in patients is associated with an altereration in the level of expression of one or more markers listed in Tables 1-2. While, as discussed above, some of these changes in expression level result from occurrence of the ovarian cancer, others of these changes induce, maintain, and promote the cancerous

10   state of ovarian cancer cells. Thus, ovarian cancer characterized by an increase in the level of expression of one or more markers listed in either or both of Tables 1-2 can be inhibited by inhibiting expression of those markers.

Expression of a marker listed in Tables 1-2 can be inhibited in a number of ways generally known in the art. For example, an antisense oligonucleotide can be provided

15   to the ovarian cancer cells in order to inhibit transcription, translation, or both, of the marker(s). Alternately, a polynucleotide encoding an antibody, an antibody derivative, or an antibody fragment, and operably linked with an appropriate promoter/regulator region, can be provided to the cell in order to generate intracellular antibodies which will inhibit the function or activity of the protein corresponding to the marker(s). Using

20   the methods described herein, a variety of molecules, particularly including molecules sufficiently small that they are able to cross the cell membrane, can be screened in order to identify molecules which inhibit expression of the marker(s). The compound so identified can be provided to the patient in order to inhibit expression of the marker(s) in the ovarian cancer cells of the patient.

25   Expression of a marker listed in Tables 1-2 can be enhanced in a number of ways generally known in the art. For example, a polynucleotide encoding the marker and operably linked with an appropriate promoter/regulator region can be provided to ovarian cancer cells of the patient in order to induce enhanced expression of the protein (and mRNA) corresponding to the marker therein. Alternatively, if the protein is

30   capable of crossing the cell membrane, inserting itself in the cell membrane, or is normally a secreted protein, then expression of the protein can be enhanced by providing

the protein (*e.g.* directly or by way of the bloodstream or another ovary-associated fluid) to ovarian cancer cells in the patient.

As described above, the cancerous state of human ovarian cells is correlated with changes in the levels of expression of the markers of the invention. The invention

5   includes a method for assessing the human ovarian cell carcinogenic potential of a test compound. This method comprises maintaining separate aliquots of human ovarian cells in the presence and absence of the test compound. Expression of a marker of the invention in each of the aliquots is compared. A significant alteration in the level of expression of a marker listed in Tables 1-2 in the aliquot maintained in the presence of

10   the test compound (relative to the aliquot maintained in the absence of the test compound) is an indication that the test compound possesses human ovarian cell carcinogenic potential. The relative carcinogenic potentials of various test compounds can be assessed by comparing the degree of enhancement or inhibition of the level of expression of the relevant markers, by comparing the number of markers for which the

15   level of expression is enhanced or inhibited, or by comparing both.

Various aspects of the invention are described in further detail in the following subsections.

I. Isolated Nucleic Acid Molecules

20   One aspect of the invention pertains to novel isolated nucleic acid molecules that correspond to a marker of the invention, including nucleic acids which encode a polypeptide corresponding to a marker of the invention or a portion of such a polypeptide. Isolated nucleic acids of the invention also include nucleic acid molecules sufficient for use as hybridization probes to identify nucleic acid molecules that

25   correspond to a marker of the invention, including nucleic acids which encode a polypeptide corresponding to a marker of the invention, and fragments of such nucleic acid molecules, *e.g.*, those suitable for use as PCR primers for the amplification or mutation of nucleic acid molecules. As used herein, the term "nucleic acid molecule" is intended to include DNA molecules (*e.g.*, cDNA or genomic DNA) and RNA molecules

30   (*e.g.*, mRNA) and analogs of the DNA or RNA generated using nucleotide analogs. The nucleic acid molecule can be single-stranded or double-stranded, but preferably is double-stranded DNA.

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An "isolated" nucleic acid molecule is one which is separated from other nucleic acid molecules which are present in the natural source of the nucleic acid molecule. Preferably, an "isolated" nucleic acid molecule is free of sequences (preferably protein-encoding sequences) which naturally flank the nucleic acid (*i.e.*, sequences located at the

5   5' and 3' ends of the nucleic acid) in the genomic DNA of the organism from which the nucleic acid is derived. For example, in various embodiments, the isolated nucleic acid molecule can contain less than about 5 kB, 4 kB, 3 kB, 2 kB, 1 kB, 0.5 kB or 0.1 kB of nucleotide sequences which naturally flank the nucleic acid molecule in genomic DNA of the cell from which the nucleic acid is derived. Moreover, an "isolated" nucleic acid

10   molecule, such as a cDNA molecule, can be substantially free of other cellular material, or culture medium when produced by recombinant techniques, or substantially free of chemical precursors or other chemicals when chemically synthesized.

A nucleic acid molecule of the present invention can be isolated using standard molecular biology techniques and the sequence information in the database records

15   described herein. Using all or a portion of such nucleic acid sequences, nucleic acid molecules of the invention can be isolated using standard hybridization and cloning techniques (*e.g.*, as described in Sambrook *et al.*, ed., *Molecular Cloning: A Laboratory Manual, 2nd ed.*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1989).

20   A nucleic acid molecule of the invention can be amplified using cDNA, mRNA, or genomic DNA as a template and appropriate oligonucleotide primers according to standard PCR amplification techniques. The nucleic acid so amplified can be cloned into an appropriate vector and characterized by DNA sequence analysis. Furthermore, oligonucleotides corresponding to all or a portion of a nucleic acid molecule of the

25   invention can be prepared by standard synthetic techniques, *e.g.*, using an automated DNA synthesizer.

In another preferred embodiment, an isolated nucleic acid molecule of the invention comprises a nucleic acid molecule which has a nucleotide sequence complementary to the nucleotide sequence of a nucleic acid corresponding to a marker

30   of the invention or to the nucleotide sequence of a nucleic acid encoding a protein which corresponds to a marker of the invention. A nucleic acid molecule which is complementary to a given nucleotide sequence is one which is sufficiently

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complementary to the given nucleotide sequence that it can hybridize to the given nucleotide sequence thereby forming a stable duplex.

Moreover, a nucleic acid molecule of the invention can comprise only a portion of a nucleic acid sequence, wherein the full length nucleic acid sequence comprises a
5   marker of the invention or which encodes a polypeptide corresponding to a marker of the invention. Such nucleic acids can be used, for example, as a probe or primer. The probe/primer typically is used as one or more substantially purified oligonucleotides. The oligonucleotide typically comprises a region of nucleotide sequence that hybridizes under stringent conditions to at least about 7, preferably about 15, more preferably about
10   25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, or 400 or more consecutive nucleotides of a nucleic acid of the invention.

Probes based on the sequence of a nucleic acid molecule of the invention can be used to detect transcripts or genomic sequences corresponding to one or more markers of the invention. The probe comprises a label group attached thereto, e.g., a
15   radioisotope, a fluorescent compound, an enzyme, or an enzyme co-factor. Such probes can be used as part of a diagnostic test kit for identifying cells or tissues which mis-express the protein, such as by measuring levels of a nucleic acid molecule encoding the protein in a sample of cells from a subject, e.g., detecting mRNA levels or determining whether a gene encoding the protein has been mutated or deleted.
20   The invention further encompasses nucleic acid molecules that differ, due to degeneracy of the genetic code, from the nucleotide sequence of nucleic acids encoding a protein which corresponds to a marker of the invention, and thus encode the same protein.

It will be appreciated by those skilled in the art that DNA sequence
25   polymorphisms that lead to changes in the amino acid sequence can exist within a population (e.g., the human population). Such genetic polymorphisms can exist among individuals within a population due to natural allelic variation. An allele is one of a group of genes which occur alternatively at a given genetic locus. In addition, it will be appreciated that DNA polymorphisms that affect RNA expression levels can also exist
30   that may affect the overall expression level of that gene (e.g., by affecting regulation or degradation).

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As used herein, the phrase "allelic variant" refers to a nucleotide sequence which occurs at a given locus or to a polypeptide encoded by the nucleotide sequence.

As used herein, the terms "gene" and "recombinant gene" refer to nucleic acid ·molecules comprising an open reading frame encoding a polypeptide corresponding to a

5   marker of the invention. Such natural allelic variations can typically result in 1-5% variance in the nucleotide sequence of a given gene. Alternative alleles can be identified by sequencing the gene of interest in a number of different individuals. This can be readily carried out by using hybridization probes to identify the same genetic locus in a variety of individuals. Any and all such nucleotide variations and resulting amino acid

10   polymorphisms or variations that are the result of natural allelic variation and that do not alter the functional activity are intended to be within the scope of the invention.

In another embodiment, an isolated nucleic acid molecule of the invention is at least 7, 15, 20, 25, 30, 40, 60, 80, 100, 150, 200, 250, 300, 350, 400, 450, 550, 650, 700, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 3500,

15   4000, 4500, or more nucleotides in length and hybridizes under stringent conditions to a nucleic acid corresponding to a marker of the invention or to a nucleic acid encoding a protein corresponding to a marker of the invention. As used herein, the term "hybridizes under stringent conditions" is intended to describe conditions for hybridization and washing under which nucleotide sequences at least 75% (80%, 85%, preferably 90%)

20   identical to each other typically remain hybridized to each other. Such stringent conditions are known to those skilled in the art and can be found in sections 6.3.1-6.3.6 of *Current Protocols in Molecular Biology*, John Wiley & Sons, N.Y. (1989). A preferred, non-limiting example of stringent hybridization conditions for annealing two single-stranded DNA each of which is at least about 100 bases in length and/or for

25   annealing a single-stranded DNA and a single-stranded RNA each of which is at least about 100 bases in length, are hybridization in 6X sodium chloride/sodium citrate (SSC) at about 45°C, followed by one or more washes in 0.2X SSC, 0.1% SDS at 50-65°C. Further preferred hybridization conditions are taught in Lockhart, *et al.*, Nature Biotechnology, Volume 14, 1996 August:1675-1680; Breslauer, *et al.*, Proc. Natl. Acad.

30   Sci. USA, Volume 83, 1986 June: 3746-3750; Van Ness, *et al.*, Nucleic Acids Research, Volume 19, No. 19, 1991 September: 5143-5151; McGraw, *et al.*, BioTechniques,

Volume 8, No. 6 1990: 674-678; and Milner, *et al.*, Nature Biotechnology, Volume 15, 1997 June: 537-541, all expressly incorporated by reference.

In addition to naturally-occurring allelic variants of a nucleic acid molecule of the invention that can exist in the population, the skilled artisan will further appreciate
5   that sequence changes can be introduced by mutation thereby leading to changes in the amino acid sequence of the encoded protein, without altering the biological activity of the protein encoded thereby. For example, one can make nucleotide substitutions leading to amino acid substitutions at "non-essential" amino acid residues. A "non-essential" amino acid residue is a residue that can be altered from the wild-type
10   sequence without altering the biological activity, whereas an "essential" amino acid residue is required for biological activity. For example, amino acid residues that are not conserved or only semi-conserved among homologs of various species may be non-essential for activity and thus would be likely targets for alteration. Alternatively, amino acid residues that are conserved among the homologs of various species (*e.g.*, murine
15   and human) may be essential for activity and thus would not be likely targets for alteration.

Accordingly, another aspect of the invention pertains to nucleic acid molecules encoding a polypeptide of the invention that contain changes in amino acid residues that are not essential for activity. Such polypeptides differ in amino acid sequence from the
20   naturally-occurring proteins which correspond to the markers of the invention, yet retain biological activity. In one embodiment, such a protein has an amino acid sequence that is at least about 40% identical, 50%, 60%, 70%, 80%, 90%, 95%, or 98% identical to the amino acid sequence of one of the proteins which correspond to the markers of the invention.

25   An isolated nucleic acid molecule encoding a variant protein can be created by introducing one or more nucleotide substitutions, additions or deletions into the nucleotide sequence of nucleic acids of the invention, such that one or more amino acid residue substitutions, additions, or deletions are introduced into the encoded protein. Mutations can be introduced by standard techniques, such as site-directed mutagenesis
30   and PCR-mediated mutagenesis. Preferably, conservative amino acid substitutions are made at one or more predicted non-essential amino acid residues. A "conservative amino acid substitution" is one in which the amino acid residue is replaced with an

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amino acid residue having a similar side chain. Families of amino acid residues having similar side chains have been defined in the art. These families include amino acids with basic side chains (*e.g.*, lysine, arginine, histidine), acidic side chains (*e.g.*, aspartic acid, glutamic acid), uncharged polar side chains (*e.g.*, glycine, asparagine, glutamine,

5   serine, threonine, tyrosine, cysteine), non-polar side chains (*e.g.*, alanine, valine, leucine, isoleucine, proline, phenylalanine, methionine, tryptophan), beta-branched side chains (*e.g.*, threonine, valine, isoleucine) and aromatic side chains (*e.g.*, tyrosine, phenylalanine, tryptophan, histidine). Alternatively, mutations can be introduced randomly along all or part of the coding sequence, such as by saturation mutagenesis,

10   and the resultant mutants can be screened for biological activity to identify mutants that retain activity. Following mutagenesis, the encoded protein can be expressed recombinantly and the activity of the protein can be determined.

The present invention encompasses antisense nucleic acid molecules, *i.e.*, molecules which are complementary to a sense nucleic acid of the invention, *e.g.*,

15   complementary to the coding strand of a double-stranded cDNA molecule corresponding to a marker of the invention or complementary to an mRNA sequence corresponding to a marker of the invention. Accordingly, an antisense nucleic acid of the invention can hydrogen bond to (*i.e.* anneal with) a sense nucleic acid of the invention. The antisense nucleic acid can be complementary to an entire coding strand,

20   or to only a portion thereof, *e.g.*, all or part of the protein coding region (or open reading frame). An antisense nucleic acid molecule can also be antisense to all or part of a non-coding region of the coding strand of a nucleotide sequence encoding a polypeptide of the invention. The non-coding regions ("5' and 3' untranslated regions") are the 5' and 3' sequences which flank the coding region and are not translated into amino acids.

25   An antisense oligonucleotide can be, for example, about 5, 10, 15, 20, 25, 30, 35, 40, 45, or 50 or more nucleotides in length. An antisense nucleic acid of the invention can be constructed using chemical synthesis and enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid (*e.g.*, an antisense oligonucleotide) can be chemically synthesized using naturally occurring nucleotides or

30   variously modified nucleotides designed to increase the biological stability of the molecules or to increase the physical stability of the duplex formed between the antisense and sense nucleic acids, *e.g.*, phosphorothioate derivatives and acridine

substituted nucleotides can be used. Examples of modified nucleotides which can be used to generate the antisense nucleic acid include 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, hypoxanthine, xanthine, 4-acetylcytosine, 5-(carboxyhydroxylmethyl) uracil, 5-carboxymethylaminomethyl-2-thiouridine, 5-

5   carboxymethylaminomethyluracil, dihydrouracil, beta-D-galactosylqueosine, inosine, N6-isopentenyladenine, 1-methylguanine, 1-methylinosine, 2,2-dimethylguanine, 2-methyladenine, 2-methylguanine, 3-methylcytosine, 5-methylcytosine, N6-adenine, 7-methylguanine, 5-methylaminomethyluracil, 5-methoxyaminomethyl-2-thiouracil, beta-D-mannosylqueosine, 5'-methoxycarboxymethyluracil, 5-methoxyuracil, 2-methylthio-

10   N6-isopentenyladenine, uracil-5-oxyacetic acid (v), wybutoxosine, pseudouracil, queosine, 2-thiocytosine, 5-methyl-2-thiouracil, 2-thiouracil, 4-thiouracil, 5-methyluracil, uracil-5-oxyacetic acid methylester, uracil-5-oxyacetic acid (v), 5-methyl-2-thiouracil, 3-(3-amino-3-N-2-carboxypropyl) uracil, (acp3)w, and 2,6-diaminopurine. Alternatively, the antisense nucleic acid can be produced biologically using an

15   expression vector into which a nucleic acid has been sub-cloned in an antisense orientation (*i.e.*, RNA transcribed from the inserted nucleic acid will be of an antisense orientation to a target nucleic acid of interest, described further in the following subsection).

The antisense nucleic acid molecules of the invention are typically administered

20   to a subject or generated *in situ* such that they hybridize with or bind to cellular mRNA and/or genomic DNA encoding a polypeptide corresponding to a selected marker of the invention to thereby inhibit expression of the marker, *e.g.*, by inhibiting transcription and/or translation. The hybridization can be by conventional nucleotide complementarity to form a stable duplex, or, for example, in the case of an antisense

25   nucleic acid molecule which binds to DNA duplexes, through specific interactions in the major groove of the double helix. Examples of a route of administration of antisense nucleic acid molecules of the invention includes direct injection at a tissue site or infusion of the antisense nucleic acid into an ovary-associated body fluid. Alternatively, antisense nucleic acid molecules can be modified to target selected cells and then

30   administered systemically. For example, for systemic administration, antisense molecules can be modified such that they specifically bind to receptors or antigens expressed on a selected cell surface, *e.g.*, by linking the antisense nucleic acid molecules

to peptides or antibodies which bind to cell surface receptors or antigens. The antisense nucleic acid molecules can also be delivered to cells using the vectors described herein. To achieve sufficient intracellular concentrations of the antisense molecules, vector constructs in which the antisense nucleic acid molecule is placed under the control of a

5   strong pol II or pol III promoter are preferred.

An antisense nucleic acid molecule of the invention can be an α-anomeric nucleic acid molecule. An α-anomeric nucleic acid molecule forms specific double-stranded hybrids with complementary RNA in which, contrary to the usual α-units, the strands run parallel to each other (Gaultier *et al.*, 1987, *Nucleic Acids Res.* 15:6625-

10   6641). The antisense nucleic acid molecule can also comprise a 2'-o-methylribonucleotide (Inoue *et al.*, 1987, *Nucleic Acids Res.* 15:6131-6148) or a chimeric RNA-DNA analogue (Inoue *et al.*, 1987, *FEBS Lett.* 215:327-330).

The invention also encompasses ribozymes. Ribozymes are catalytic RNA molecules with ribonuclease activity which are capable of cleaving a single-stranded

15   nucleic acid, such as an mRNA, to which they have a complementary region. Thus, ribozymes (*e.g.*, hammerhead ribozymes as described in Haselhoff and Gerlach, 1988, *Nature* 334:585-591) can be used to catalytically cleave mRNA transcripts to thereby inhibit translation of the protein encoded by the mRNA. A ribozyme having specificity for a nucleic acid molecule encoding a polypeptide corresponding to a marker of the

20   invention can be designed based upon the nucleotide sequence of a cDNA corresponding to the marker. For example, a derivative of a *Tetrahymena* L-19 IVS RNA can be constructed in which the nucleotide sequence of the active site is complementary to the nucleotide sequence to be cleaved (see Cech *et al.* U.S. Patent No. 4,987,071; and Cech *et al.* U.S. Patent No. 5,116,742). Alternatively, an mRNA

25   encoding a polypeptide of the invention can be used to select a catalytic RNA having a specific ribonuclease activity from a pool of RNA molecules (see, *e.g.*, Bartel and Szostak, 1993, *Science* 261:1411-1418).

The invention also encompasses nucleic acid molecules which form triple helical structures. For example, expression of a polypeptide of the invention can be inhibited

30   by targeting nucleotide sequences complementary to the regulatory region of the gene encoding the polypeptide (*e.g.*, the promoter and/or enhancer) to form triple helical structures that prevent transcription of the gene in target cells. See generally Helene

(1991) *Anticancer Drug Des.* 6(6):569-84; Helene (1992) *Ann. N.Y. Acad. Sci.* 660:27-36; and Maher (1992) *Bioassays* 14(12):807-15.

     In various embodiments, the nucleic acid molecules of the invention can be
·modified at the base moiety, sugar moiety or phosphate backbone to improve, *e.g.*, the
5   stability, hybridization, or solubility of the molecule. For example, the deoxyribose
phosphate backbone of the nucleic acids can be modified to generate peptide nucleic
acids (see Hyrup *et al.*, 1996, *Bioorganic & Medicinal Chemistry* 4(1): 5-23). As used
herein, the terms "peptide nucleic acids" or "PNAs" refer to nucleic acid mimics, *e.g.*,
DNA mimics, in which the deoxyribose phosphate backbone is replaced by a
10 pseudopeptide backbone and only the four natural nucleobases are retained. The neutral
backbone of PNAs has been shown to allow for specific hybridization to DNA and RNA
under conditions of low ionic strength. The synthesis of PNA oligomers can be
performed using standard solid phase peptide synthesis protocols as described in Hyrup
et al. (1996), *supra*; Perry-O'Keefe *et al.* (1996) *Proc. Natl. Acad. Sci. USA* 93:14670-
15 675.

     PNAs can be used in therapeutic and diagnostic applications. For example,
PNAs can be used as antisense or antigene agents for sequence-specific modulation of
gene expression by, *e.g.*, inducing transcription or translation arrest or inhibiting
replication. PNAs can also be used, *e.g.*, in the analysis of single base pair mutations in
20 a gene by, *e.g.*, PNA directed PCR clamping; as artificial restriction enzymes when used
in combination with other enzymes, *e.g.*, S1 nucleases (Hyrup (1996), *supra*; or as
probes or primers for DNA sequence and hybridization (Hyrup, 1996, *supra*; Perry-
O'Keefe *et al.*, 1996, *Proc. Natl. Acad. Sci. USA* 93:14670-675).

     In another embodiment, PNAs can be modified, *e.g.*, to enhance their stability or
25 cellular uptake, by attaching lipophilic or other helper groups to PNA, by the formation
of PNA-DNA chimeras, or by the use of liposomes or other techniques of drug delivery
known in the art. For example, PNA-DNA chimeras can be generated which can
combine the advantageous properties of PNA and DNA. Such chimeras allow DNA
recognition enzymes, *e.g.*, RNASE H and DNA polymerases, to interact with the DNA
30 portion while the PNA portion would provide high binding affinity and specificity.
PNA-DNA chimeras can be linked using linkers of appropriate lengths selected in terms
of base stacking, number of bonds between the nucleobases, and orientation (Hyrup,

1996, *supra*). The synthesis of PNA-DNA chimeras can be performed as described in Hyrup (1996), *supra*, and Finn *et al.* (1996) *Nucleic Acids Res.* 24(17):3357-63. For example, a DNA chain can be synthesized on a solid support using standard phosphoramidite coupling chemistry and modified nucleoside analogs. Compounds

5   such as 5'-(4-methoxytrityl)amino-5'-deoxy-thymidine phosphoramidite can be used as a link between the PNA and the 5' end of DNA (Mag *et al.*, 1989, *Nucleic Acids Res.* 17:5973-88). PNA monomers are then coupled in a step-wise manner to produce a chimeric molecule with a 5' PNA segment and a 3' DNA segment (Finn *et al.*, 1996, *Nucleic Acids Res.* 24(17):3357-63). Alternatively, chimeric molecules can be

10   synthesized with a 5' DNA segment and a 3' PNA segment (Peterser *et al.*, 1975, *Bioorganic Med. Chem. Lett.* 5:1119-11124).

In other embodiments, the oligonucleotide can include other appended groups such as peptides (*e.g.*, for targeting host cell receptors *in vivo*), or agents facilitating transport across the cell membrane (see, *e.g.*, Letsinger *et al.*, 1989, *Proc. Natl. Acad.*

15   *Sci. USA* 86:6553-6556; Lemaitre *et al.*, 1987, *Proc. Natl. Acad. Sci. USA* 84:648-652; PCT Publication No. WO 88/09810) or the blood-brain barrier (see, *e.g.*, PCT Publication No. WO 89/10134). In addition, oligonucleotides can be modified with hybridization-triggered cleavage agents (see, *e.g.*, Krol *et al.*, 1988, *Bio/Techniques* 6:958-976) or intercalating agents (see, *e.g.*, Zon, 1988, *Pharm. Res.* 5:539-549). To

20   this end, the oligonucleotide can be conjugated to another molecule, *e.g.*, a peptide, hybridization triggered cross-linking agent, transport agent, hybridization-triggered cleavage agent, etc.

The invention also includes molecular beacon nucleic acids having at least one region which is complementary to a nucleic acid of the invention, such that the

25   molecular beacon is useful for quantitating the presence of the nucleic acid of the invention in a sample. A "molecular beacon" nucleic acid is a nucleic acid comprising a pair of complementary regions and having a fluorophore and a fluorescent quencher associated therewith. The fluorophore and quencher are associated with different portions of the nucleic acid in such an orientation that when the complementary regions

30   are annealed with one another, fluorescence of the fluorophore is quenched by the quencher. When the complementary regions of the nucleic acid are not annealed with

one another, fluorescence of the fluorophore is quenched to a lesser degree. Molecular beacon nucleic acids are described, for example, in U.S. Patent 5,876,930.

II. Isolated Proteins and Antibodies

5   One aspect of the invention pertains to isolated proteins which correspond to individual markers of the invention, and biologically active portions thereof, as well as polypeptide fragments suitable for use as immunogens to raise antibodies directed against a polypeptide corresponding to a marker of the invention. In one embodiment, the native polypeptide corresponding to a marker can be isolated from cells or tissue

10   sources by an appropriate purification scheme using standard protein purification techniques. In another embodiment, polypeptides corresponding to a marker of the invention are produced by recombinant DNA techniques. Alternative to recombinant expression, a polypeptide corresponding to a marker of the invention can be synthesized chemically using standard peptide synthesis techniques.

15   An "isolated" or "purified" protein or biologically active portion thereof is substantially free of cellular material or other contaminating proteins from the cell or tissue source from which the protein is derived, or substantially free of chemical precursors or other chemicals when chemically synthesized. The language "substantially free of cellular material" includes preparations of protein in which the

20   protein is separated from cellular components of the cells from which it is isolated or recombinantly produced. Thus, protein that is substantially free of cellular material includes preparations of protein having less than about 30%, 20%, 10%, or 5% (by dry weight) of heterologous protein (also referred to herein as a "contaminating protein"). When the protein or biologically active portion thereof is recombinantly produced, it is

25   also preferably substantially free of culture medium, i.e., culture medium represents less than about 20%, 10%, or 5% of the volume of the protein preparation. When the protein is produced by chemical synthesis, it is preferably substantially free of chemical precursors or other chemicals, i.e., it is separated from chemical precursors or other chemicals which are involved in the synthesis of the protein. Accordingly such

30   preparations of the protein have less than about 30%, 20%, 10%, 5% (by dry weight) of chemical precursors or compounds other than the polypeptide of interest.

Biologically active portions of a polypeptide corresponding to a marker of the invention include polypeptides comprising amino acid sequences sufficiently identical to or derived from the amino acid sequence of the protein corresponding to the marker, which include fewer amino acids than the full length protein, and exhibit at least one

5   activity of the corresponding full-length protein. Typically, biologically active portions comprise a domain or motif with at least one activity of the corresponding protein. A biologically active portion of a protein of the invention can be a polypeptide which is, for example, 10, 25, 50, 100 or more amino acids in length. Moreover, other biologically active portions, in which other regions of the protein are deleted, can be

10   prepared by recombinant techniques and evaluated for one or more of the functional activities of the native form of a polypeptide of the invention.

Preferred polypeptides are encoded by the nucleotide sequences of Tables 1-2. Other useful proteins are substantially identical (e.g., at least about 40%, preferably 50%, 60%, 70%, 80%, 90%, 95%, or 99%) to one of these sequences and retain the

15   functional activity of the protein of the corresponding naturally-occurring protein yet differ in amino acid sequence due to natural allelic variation or mutagenesis.

To determine the percent identity of two amino acid sequences or of two nucleic acids, the sequences are aligned for optimal comparison purposes (e.g., gaps can be introduced in the sequence of a first amino acid or nucleic acid sequence for optimal

20   alignment with a second amino or nucleic acid sequence). The amino acid residues or nucleotides at corresponding amino acid positions or nucleotide positions are then compared. When a position in the first sequence is occupied by the same amino acid residue or nucleotide as the corresponding position in the second sequence, then the molecules are identical at that position. The percent identity between the two sequences

25   is a function of the number of identical positions shared by the sequences (i.e., % identity = # of identical positions/total # of positions (e.g., overlapping positions) x100). In one embodiment the two sequences are the same length.

The determination of percent identity between two sequences can be accomplished using a mathematical algorithm. A preferred, non-limiting example of a

30   mathematical algorithm utilized for the comparison of two sequences is the algorithm of Karlin and Altschul (1990) Proc. Natl. Acad. Sci. USA 87:2264-2268, modified as in Karlin and Altschul (1993) Proc. Natl. Acad. Sci. USA 90:5873-5877. Such an

algorithm is incorporated into the NBLAST and XBLAST programs of Altschul, *et al.*
(1990) *J. Mol. Biol.* 215:403-410. BLAST nucleotide searches can be performed with
the NBLAST program, score = 100, wordlength = 12 to obtain nucleotide sequences
homologous to a nucleic acid molecules of the invention. BLAST protein searches can

5   be performed with the XBLAST program, score = 50, wordlength = 3 to obtain amino
acid sequences homologous to a protein molecules of the invention. To obtain gapped
alignments for comparison purposes, Gapped BLAST can be utilized as described in
Altschul *et al.* (1997) *Nucleic Acids Res.* 25:3389-3402. Alternatively, PSI-Blast can be
used to perform an iterated search which detects distant relationships between

10   molecules. When utilizing BLAST, Gapped BLAST, and PSI-Blast programs, the
default parameters of the respective programs (*e.g.*, XBLAST and NBLAST) can be
used. See http://www.ncbi.nlm.nih.gov. Another preferred, non-limiting example of a
mathematical algorithm utilized for the comparison of sequences is the algorithm of
Myers and Miller, (1988) *CABIOS* 4:11-17. Such an algorithm is incorporated into the

15   ALIGN program (version 2.0) which is part of the GCG sequence alignment software
package. When utilizing the ALIGN program for comparing amino acid sequences, a
PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4 can be
used. Yet another useful algorithm for identifying regions of local sequence similarity
and alignment is the FASTA algorithm as described in Pearson and Lipman (1988)

20   *Proc. Natl. Acad. Sci. USA* 85:2444-2448. When using the FASTA algorithm for
comparing nucleotide or amino acid sequences, a PAM120 weight residue table can, for
example, be used with a *k*-tuple value of 2.

       The percent identity between two sequences can be determined using techniques
similar to those described above, with or without allowing gaps. In calculating percent

25   identity, only exact matches are counted.

       The invention also provides chimeric or fusion proteins corresponding to a
marker of the invention. As used herein, a "chimeric protein" or "fusion protein"
comprises all or part (preferably a biologically active part) of a polypeptide
corresponding to a marker of the invention operably linked to a heterologous

30   polypeptide (*i.e.*, a polypeptide other than the polypeptide corresponding to the marker).
Within the fusion protein, the term "operably linked" is intended to indicate that the
polypeptide of the invention and the heterologous polypeptide are fused in-frame to each

other. The heterologous polypeptide can be fused to the amino-terminus or the carboxyl-terminus of the polypeptide of the invention.

One useful fusion protein is a GST fusion protein in which a polypeptide corresponding to a marker of the invention is fused to the carboxyl terminus of GST

5   sequences. Such fusion proteins can facilitate the purification of a recombinant polypeptide of the invention.

In another embodiment, the fusion protein contains a heterologous signal sequence at its amino terminus. For example, the native signal sequence of a polypeptide corresponding to a marker of the invention can be removed and replaced

10   with a signal sequence from another protein. For example, the gp67 secretory sequence of the baculovirus envelope protein can be used as a heterologous signal sequence (Ausubel *et al.*, ed., *Current Protocols in Molecular Biology*, John Wiley & Sons, NY, 1992). Other examples of eukaryotic heterologous signal sequences include the secretory sequences of melittin and human placental alkaline phosphatase (Stratagene;

15   La Jolla, California). In yet another example, useful prokaryotic heterologous signal sequences include the phoA secretory signal (Sambrook *et al., supra*) and the protein A secretory signal (Pharmacia Biotech; Piscataway, New Jersey).

In yet another embodiment, the fusion protein is an immunoglobulin fusion protein in which all or part of a polypeptide corresponding to a marker of the invention

20   is fused to sequences derived from a member of the immunoglobulin protein family. The immunoglobulin fusion proteins of the invention can be incorporated into pharmaceutical compositions and administered to a subject to inhibit an interaction between a ligand (soluble or membrane-bound) and a protein on the surface of a cell (receptor), to thereby suppress signal transduction *in vivo*. The immunoglobulin fusion

25   protein can be used to affect the bioavailability of a cognate ligand of a polypeptide of the invention. Inhibition of ligand/receptor interaction can be useful therapeutically, both for treating proliferative and differentiative disorders and for modulating (*e.g.* promoting or inhibiting) cell survival. Moreover, the immunoglobulin fusion proteins of the invention can be used as immunogens to produce antibodies directed against a

30   polypeptide of the invention in a subject, to purify ligands and in screening assays to identify molecules which inhibit the interaction of receptors with ligands.

Chimeric and fusion proteins of the invention can be produced by standard recombinant DNA techniques. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers. Alternatively, PCR amplification of gene fragments can be carried out using anchor

5   primers which give rise to complementary overhangs between two consecutive gene fragments which can subsequently be annealed and re-amplified to generate a chimeric gene sequence (see, e.g., Ausubel et al., supra). Moreover, many expression vectors are commercially available that already encode a fusion moiety (e.g., a GST polypeptide). A nucleic acid encoding a polypeptide of the invention can be cloned into such an

10   expression vector such that the fusion moiety is linked in-frame to the polypeptide of the invention.

A signal sequence can be used to facilitate secretion and isolation of the secreted protein or other proteins of interest. Signal sequences are typically characterized by a core of hydrophobic amino acids which are generally cleaved from the mature protein

15   during secretion in one or more cleavage events. Such signal peptides contain processing sites that allow cleavage of the signal sequence from the mature proteins as they pass through the secretory pathway. Thus, the invention pertains to the described polypeptides having a signal sequence, as well as to polypeptides from which the signal sequence has been proteolytically cleaved (i.e., the cleavage products). In one

20   embodiment, a nucleic acid sequence encoding a signal sequence can be operably linked in an expression vector to a protein of interest, such as a protein which is ordinarily not secreted or is otherwise difficult to isolate. The signal sequence directs secretion of the protein, such as from a eukaryotic host into which the expression vector is transformed, and the signal sequence is subsequently or concurrently cleaved. The protein can then

25   be readily purified from the extracellular medium by art recognized methods. Alternatively, the signal sequence can be linked to the protein of interest using a sequence which facilitates purification, such as with a GST domain.

The present invention also pertains to variants of the polypeptides corresponding to individual markers of the invention. Such variants have an altered amino acid

30   sequence which can function as either agonists (mimetics) or as antagonists. Variants can be generated by mutagenesis, e.g., discrete point mutation or truncation. An agonist can retain substantially the same, or a subset, of the biological activities of the naturally

occurring form of the protein. An antagonist of a protein can inhibit one or more of the activities of the naturally occurring form of the protein by, for example, competitively binding to a downstream or upstream member of a cellular signaling cascade which includes the protein of interest. Thus, specific biological effects can be elicited by

5　　treatment with a variant of limited function. Treatment of a subject with a variant having a subset of the biological activities of the naturally occurring form of the protein can have fewer side effects in a subject relative to treatment with the naturally occurring form of the protein.

Variants of a protein of the invention which function as either agonists

10　　(mimetics) or as antagonists can be identified by screening combinatorial libraries of mutants, e.g., truncation mutants, of the protein of the invention for agonist or antagonist activity. In one embodiment, a variegated library of variants is generated by combinatorial mutagenesis at the nucleic acid level and is encoded by a variegated gene library. A variegated library of variants can be produced by, for example, enzymatically

15　　ligating a mixture of synthetic oligonucleotides into gene sequences such that a degenerate set of potential protein sequences is expressible as individual polypeptides, or alternatively, as a set of larger fusion proteins (e.g., for phage display). There are a variety of methods which can be used to produce libraries of potential variants of the polypeptides of the invention from a degenerate oligonucleotide sequence. Methods for

20　　synthesizing degenerate oligonucleotides are known in the art (see, e.g., Narang, 1983, Tetrahedron 39:3; Itakura et al., 1984, Annu. Rev. Biochem. 53:323; Itakura et al., 1984, Science 198:1056; Ike et al., 1983 Nucleic Acid Res. 11:477).

In addition, libraries of fragments of the coding sequence of a polypeptide corresponding to a marker of the invention can be used to generate a variegated

25　　population of polypeptides for screening and subsequent selection of variants. For example, a library of coding sequence fragments can be generated by treating a double stranded PCR fragment of the coding sequence of interest with a nuclease under conditions wherein nicking occurs only about once per molecule, denaturing the double stranded DNA, renaturing the DNA to form double stranded DNA which can include

30　　sense/antisense pairs from different nicked products, removing single stranded portions from reformed duplexes by treatment with S1 nuclease, and ligating the resulting fragment library into an expression vector. By this method, an expression library can be

derived which encodes amino terminal and internal fragments of various sizes of the protein of interest.

Several techniques are known in the art for screening gene products of combinatorial libraries made by point mutations or truncation, and for screening cDNA

5   libraries for gene products having a selected property. The most widely used techniques, which are amenable to high through-put analysis, for screening large gene libraries typically include cloning the gene library into replicable expression vectors, transforming appropriate cells with the resulting library of vectors, and expressing the combinatorial genes under conditions in which detection of a desired activity facilitates

10   isolation of the vector encoding the gene whose product was detected. Recursive ensemble mutagenesis (REM), a technique which enhances the frequency of functional mutants in the libraries, can be used in combination with the screening assays to identify variants of a protein of the invention (Arkin and Yourvan, 1992, *Proc. Natl. Acad. Sci. USA* 89:7811-7815; Delgrave *et al.*, 1993, *Protein Engineering* 6(3):327- 331).

15   An isolated polypeptide corresponding to a marker of the invention, or a fragment thereof, can be used as an immunogen to generate antibodies using standard techniques for polyclonal and monoclonal antibody preparation. The full-length polypeptide or protein can be used or, alternatively, the invention provides antigenic peptide fragments for use as immunogens. The antigenic peptide of a protein of the

20   invention comprises at least 8 (preferably 10, 15, 20, or 30 or more) amino acid residues of the amino acid sequence of one of the polypeptides of the invention, and encompasses an epitope of the protein such that an antibody raised against the peptide forms a specific immune complex with a marker of the invention to which the protein corresponds. Preferred epitopes encompassed by the antigenic peptide are regions that are located on

25   the surface of the protein, *e.g.*, hydrophilic regions. Hydrophobicity sequence analysis, hydrophilicity sequence analysis, or similar analyses can be used to identify hydrophilic regions.

An immunogen typically is used to prepare antibodies by immunizing a suitable (*i.e.* immunocompetent) subject such as a rabbit, goat, mouse, or other mammal or

30   vertebrate. An appropriate immunogenic preparation can contain, for example, recombinantly-expressed or chemically-synthesized polypeptide. The preparation can

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further include an adjuvant, such as Freund's complete or incomplete adjuvant, or a similar immunostimulatory agent.

Accordingly, another aspect of the invention pertains to antibodies directed against a polypeptide of the invention. The terms "antibody" and "antibody substance" as used interchangeably herein refer to immunoglobulin molecules and immunologically active portions of immunoglobulin molecules, *i.e.*, molecules that contain an antigen binding site which specifically binds an antigen, such as a polypeptide of the invention, e.g., an epitope of a polypeptide of the invention. A molecule which specifically binds to a given polypeptide of the invention is a molecule which binds the polypeptide, but does not substantially bind other molecules in a sample, *e.g.*, a biological sample, which naturally contains the polypeptide. Examples of immunologically active portions of immunoglobulin molecules include F(ab) and F(ab')$_2$ fragments which can be generated by treating the antibody with an enzyme such as pepsin. The invention provides polyclonal and monoclonal antibodies. The term "monoclonal antibody" or "monoclonal antibody composition", as used herein, refers to a population of antibody molecules that contain only one species of an antigen binding site capable of immunoreacting with a particular epitope.

Polyclonal antibodies can be prepared as described above by immunizing a suitable subject with a polypeptide of the invention as an immunogen. Preferred polyclonal antibody compositions are ones that have been selected for antibodies directed against a polypeptide or polypeptides of the invention. Particularly preferred polyclonal antibody preparations are ones that contain only antibodies directed against a polypeptide or polypeptides of the invention. Particularly preferred immunogen compositions are those that contain no other human proteins such as, for example, immunogen compositions made using a non-human host cell for recombinant expression of a polypeptide of the invention. In such a manner, the only human epitope or epitopes recognized by the resulting antibody compositions raised against this immunogen will be present as part of a polypeptide or polypeptides of the invention.

The antibody titer in the immunized subject can be monitored over time by standard techniques, such as with an enzyme linked immunosorbent assay (ELISA) using immobilized polypeptide. If desired, the antibody molecules can be harvested or isolated from the subject (*e.g.*, from the blood or serum of the subject) and further

purified by well-known techniques, such as protein A chromatography to obtain the IgG
fraction. Alternatively, antibodies specific for a protein or polypeptide of the invention
can be selected or (*e.g.*, partially purified) or purified by, *e.g.*, affinity chromatography.
For example, a recombinantly expressed and purified (or partially purified) protein of

5   the invention is produced as described herein, and covalently or non-covalently coupled
to a solid support such as, for example, a chromatography column. The column can then
be used to affinity purify antibodies specific for the proteins of the invention from a
sample containing antibodies directed against a large number of different epitopes,
thereby generating a substantially purified antibody composition, *i.e.*, one that is

10   substantially free of contaminating antibodies. By a substantially purified antibody
composition is meant, in this context, that the antibody sample contains at most only
30% (by dry weight) of contaminating antibodies directed against epitopes other than
those of the desired protein or polypeptide of the invention, and preferably at most 20%,
yet more preferably at most 10%, and most preferably at most 5% (by dry weight) of the

15   sample is contaminating antibodies. A purified antibody composition means that at least
99% of the antibodies in the composition are directed against the desired protein or
polypeptide of the invention.

At an appropriate time after immunization, *e.g.*, when the specific antibody titers
are highest, antibody-producing cells can be obtained from the subject and used to

20   prepare monoclonal antibodies by standard techniques, such as the hybridoma technique
originally described by Kohler and Milstein (1975) *Nature* 256:495-497, the human B
cell hybridoma technique (see Kozbor *et al.*, 1983, *Immunol. Today* 4:72), the EBV-
hybridoma technique (see Cole *et al.*, pp. 77-96 In *Monoclonal Antibodies and Cancer
Therapy*, Alan R. Liss, Inc., 1985) or trioma techniques. The technology for producing

25   hybridomas is well known (see generally *Current Protocols in Immunology*, Coligan *et
al.* ed., John Wiley & Sons, New York, 1994). Hybridoma cells producing a
monoclonal antibody of the invention are detected by screening the hybridoma culture
supernatants for antibodies that bind the polypeptide of interest, *e.g.*, using a standard
ELISA assay.

30   Alternative to preparing monoclonal antibody-secreting hybridomas, a
monoclonal antibody directed against a polypeptide of the invention can be identified
and isolated by screening a recombinant combinatorial immunoglobulin library (*e.g.*, an

antibody phage display library) with the polypeptide of interest. Kits for generating and screening phage display libraries are commercially available (*e.g.*, the Pharmacia *Recombinant Phage Antibody System*, Catalog No. 27-9400-01; and the Stratagene ·*SurfZAP Phage Display Kit*, Catalog No. 240612). Additionally, examples of methods

5   and reagents particularly amenable for use in generating and screening antibody display library can be found in, for example, U.S. Patent No. 5,223,409; PCT Publication No. WO 92/18619; PCT Publication No. WO 91/17271; PCT Publication No. WO 92/20791; PCT Publication No. WO 92/15679; PCT Publication No. WO 93/01288; PCT Publication No. WO 92/01047; PCT Publication No. WO 92/09690; PCT

10   Publication No. WO 90/02809; Fuchs *et al.* (1991) *Bio/Technology* 9:1370-1372; Hay *et al.* (1992) *Hum. Antibod. Hybridomas* 3:81-85; Huse *et al.* (1989) *Science* 246:1275-1281; Griffiths *et al.* (1993) *EMBO J.* 12:725-734.

Additionally, recombinant antibodies, such as chimeric and humanized monoclonal antibodies, comprising both human and non-human portions, which can be

15   made using standard recombinant DNA techniques, are within the scope of the invention. A chimeric antibody is a molecule in which different portions are derived from different animal species, such as those having a variable region derived from a murine mAb and a human immunoglobulin constant region. (See, *e.g.,* Cabilly et al., U.S. Patent No. 4,816,567; and Boss et al., U.S. Patent No. 4,816,397, which are

20   incorporated herein by reference in their entirety.) Humanized antibodies are antibody molecules from non-human species having one or more complementarily determining regions (CDRs) from the non-human species and a framework region from a human immunoglobulin molecule. (See, *e.g.,* Queen, U.S. Patent No. 5,585,089, which is incorporated herein by reference in its entirety.) Such chimeric and humanized

25   monoclonal antibodies can be produced by recombinant DNA techniques known in the art, for example using methods described in PCT Publication No. WO 87/02671; European Patent Application 184,187; European Patent Application 171,496; European Patent Application 173,494; PCT Publication No. WO 86/01533; U.S. Patent No. 4,816,567; European Patent Application 125,023; Better *et al.* (1988) *Science* 240:1041-

30   1043; Liu *et al.* (1987) *Proc. Natl. Acad. Sci. USA* 84:3439-3443; Liu *et al.* (1987) *J. Immunol.* 139:3521- 3526; Sun *et al.* (1987) *Proc. Natl. Acad. Sci. USA* 84:214-218; Nishimura *et al.* (1987) *Cancer Res.* 47:999-1005; Wood *et al.* (1985) *Nature* 314:446-

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449; and Shaw *et al.* (1988) *J. Natl. Cancer Inst.* 80:1553-1559); Morrison (1985) *Science* 229:1202-1207; Oi *et al.* (1986) *Bio/Techniques* 4:214; U.S. Patent 5,225,539; Jones *et al.* (1986) *Nature* 321:552-525; Verhoeyan *et al.* (1988) *Science* 239:1534; and Beidler *et al.* (1988) *J. Immunol.* 141:4053-4060.

5   Antibodies of the invention may be used as therapeutic agents in treating cancers. In a preferred embodiment, completely human antibodies of the invention are used for therapeutic treatment of human cancer patients, particularly those having an ovarian cancer. Such antibodies can be produced, for example, using transgenic mice which are incapable of expressing endogenous immunoglobulin heavy and light chains

10 genes, but which can express human heavy and light chain genes. The transgenic mice are immunized in the normal fashion with a selected antigen, *e.g.*, all or a portion of a polypeptide corresponding to a marker of the invention. Monoclonal antibodies directed against the antigen can be obtained using conventional hybridoma technology. The human immunoglobulin transgenes harbored by the transgenic mice rearrange during B

15 cell differentiation, and subsequently undergo class switching and somatic mutation. Thus, using such a technique, it is possible to produce therapeutically useful IgG, IgA and IgE antibodies. For an overview of this technology for producing human antibodies, see Lonberg and Huszar (1995) *Int. Rev. Immunol.* 13:65-93). For a detailed discussion of this technology for producing human antibodies and human monoclonal antibodies

20 and protocols for producing such antibodies, see, *e.g.*, U.S. Patent 5,625,126; U.S. Patent 5,633,425; U.S. Patent 5,569,825; U.S. Patent 5,661,016; and U.S. Patent 5,545,806. In addition, companies such as Abgenix, Inc. (Freemont, CA), can be engaged to provide human antibodies directed against a selected antigen using technology similar to that described above.

25   Completely human antibodies which recognize a selected epitope can be generated using a technique referred to as "guided selection." In this approach a selected non-human monoclonal antibody, *e.g.*, a murine antibody, is used to guide the selection of a completely human antibody recognizing the same epitope (Jespers *et al.,* 1994, *Bio/technology* 12:899-903).

30   An antibody directed against a polypeptide corresponding to a marker of the invention (*e.g.*, a monoclonal antibody) can be used to isolate the polypeptide by standard techniques, such as affinity chromatography or immunoprecipitation.

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Moreover, such an antibody can be used to detect the marker (*e.g.*, in a cellular lysate or cell supernatant) in order to evaluate the level and pattern of expression of the marker. The antibodies can also be used diagnostically to monitor protein levels in tissues or body fluids (*e.g.* in an ovary-associated body fluid) as part of a clinical testing

5   procedure, *e.g.*, to, for example, determine the efficacy of a given treatment regimen. Detection can be facilitated by coupling the antibody to a detectable substance. Examples of detectable substances include various enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, and radioactive materials. Examples of suitable enzymes include horseradish peroxidase, alkaline

10   phosphatase, β-galactosidase, or acetylcholinesterase; examples of suitable prosthetic group complexes include streptavidin/biotin and avidin/biotin; examples of suitable fluorescent materials include umbelliferone, fluorescein, fluorescein isothiocyanate, rhodamine, dichlorotriazinylamine fluorescein, dansyl chloride or phycoerythrin; an example of a luminescent material includes luminol; examples of bioluminescent

15   materials include luciferase, luciferin, and aequorin, and examples of suitable radioactive material include ^{125}I, ^{131}I, ^{35}S or ^{3}H.

Further, an antibody (or fragment thereof) can be conjugated to a therapeutic moiety such as a cytotoxin, a therapeutic agent or a radioactive metal ion. A cytotoxin or cytotoxic agent includes any agent that is detrimental to cells. Examples include

20   taxol, cytochalasin B, gramicidin D, ethidium bromide, emetine, mitomycin, etoposide, tenoposide, vincristine, vinblastine, colchicin, doxorubicin, daunorubicin, dihydroxy anthracin dione, mitoxantrone, mithramycin, actinomycin D, 1-dehydrotestosterone, glucocorticoids, procaine, tetracaine, lidocaine, propranolol, and puromycin and analogs or homologs thereof. Therapeutic agents include, but are not limited to, antimetabolites

25   (*e.g.*, methotrexate, 6-mercaptopurine, 6-thioguanine, cytarabine, 5-fluorouracil decarbazine), alkylating agents (*e.g.*, mechlorethamine, thioepa chlorambucil, melphalan, carmustine (BSNU) and lomustine (CCNU), cyclothosphamide, busulfan, dibromomannitol, streptozotocin, mitomycin C, and cis-dichlorodiamine platinum (II) (DDP) cisplatin), anthracyclines (*e.g.*, daunorubicin (formerly daunomycin) and

30   doxorubicin), antibiotics *(e.g.*, dactinomycin (formerly actinomycin), bleomycin, mithramycin, and anthramycin (AMC)), and anti-mitotic agents (*e.g.*, vincristine and vinblastine).

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The conjugates of the invention can be used for modifying a given biological response, the drug moiety is not to be construed as limited to classical chemical therapeutic agents. For example, the drug moiety may be a protein or polypeptide possessing a desired biological activity. Such proteins may include, for example, a toxin

5   such as abrin, ricin A, pseudomonas exotoxin, or diphtheria toxin; a protein such as tumor necrosis factor, .alpha.-interferon, .beta.-interferon, nerve growth factor, platelet derived growth factor, tissue plasminogen activator; or, biological response modifiers such as, for example, lymphokines, interleukin-1 ("IL-1"), interleukin-2 ("IL-2"), interleukin-6 ("IL-6"), granulocyte macrophase colony stimulating factor ("GM-CSF"),

10   granulocyte colony stimulating factor ("G-CSF"), or other growth factors.

Techniques for conjugating such therapeutic moiety to antibodies are well known, see, e.g., Arnon et al., "Monoclonal Antibodies For Immunotargeting Of Drugs In Cancer Therapy", in Monoclonal Antibodies And Cancer Therapy, Reisfeld et al. (eds.), pp. 243-56 (Alan R. Liss, Inc. 1985); Hellstrom et al., "Antibodies For Drug

15   Delivery", in Controlled Drug Delivery (2nd Ed.), Robinson et al. (eds.), pp. 623-53 (Marcel Dekker, Inc. 1987); Thorpe, "Antibody Carriers Of Cytotoxic Agents In Cancer Therapy: A Review", in Monoclonal Antibodies '84: Biological And Clinical Applications, Pinchera et al. (eds.), pp. 475-506 (1985); "Analysis, Results, And Future Prospective Of The Therapeutic Use Of Radiolabeled Antibody In Cancer Therapy", in

20   Monoclonal Antibodies For Cancer Detection And Therapy, Baldwin et al. (eds.), pp. 303-16 (Academic Press 1985), and Thorpe et al., "The Preparation And Cytotoxic Properties Of Antibody-Toxin Conjugates", Immunol. Rev., 62:119-58 (1982).

Alternatively, an antibody can be conjugated to a second antibody to form an antibody heteroconjugate as described by Segal in U.S. Patent No. 4,676,980.

25   Accordingly, in one aspect, the invention provides substantially purified antibodies or fragments thereof, and non-human antibodies or fragments thereof, which antibodies or fragments specifically bind to a polypeptide comprising an amino acid sequence selected from the group consisting of the amino acid sequences of the present invention, an amino acid sequence encoded by the cDNA of the present invention, a

30   fragment of at least 15 amino acid residues of an amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to the amino acid sequence of the present invention (wherein the percent identity is determined using the

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ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a complement

5   thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C. In various embodiments, the substantially purified antibodies of the invention, or fragments thereof, can be human, non-human, chimeric and/or humanized antibodies.

In another aspect, the invention provides non-human antibodies or fragments

10   thereof, which antibodies or fragments specifically bind to a polypeptide comprising an amino acid sequence selected from the group consisting of: the amino acid sequence of the present invention, an amino acid sequence encoded by the cDNA of the present invention, a fragment of at least 15 amino acid residues of the amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to the

15   amino acid sequence of the present invention (wherein the percent identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a

20   complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C. Such non-human antibodies can be goat, mouse, sheep, horse, chicken, rabbit, or rat antibodies. Alternatively, the non-human antibodies of the invention can be chimeric and/or humanized antibodies. In addition, the non-human antibodies of the invention can be polyclonal antibodies or monoclonal

25   antibodies.

In still a further aspect, the invention provides monoclonal antibodies or fragments thereof, which antibodies or fragments specifically bind to a polypeptide comprising an amino acid sequence selected from the group consisting of the amino acid sequences of the present invention, an amino acid sequence encoded by the cDNA of the

30   present invention, a fragment of at least 15 amino acid residues of an amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to an amino acid sequence of the present invention (wherein the percent

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identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention,

5   or a complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C. The monoclonal antibodies can be human, humanized, chimeric and/or non-human antibodies.

The substantially purified antibodies or fragments thereof may specifically bind to a signal peptide, a secreted sequence, an extracellular domain, a transmembrane or a

10   cytoplasmic domain or cytoplasmic membrane of a polypeptide of the invention. In a particularly preferred embodiment, the substantially purified antibodies or fragments thereof, the non-human antibodies or fragments thereof, and/or the monoclonal antibodies or fragments thereof, of the invention specifically bind to a secreted sequence or an extracellular domain of the amino acid sequences of the present invention.

15   Any of the antibodies of the invention can be conjugated to a therapeutic moiety or to a detectable substance. Non-limiting examples of detectable substances that can be conjugated to the antibodies of the invention are an enzyme, a prosthetic group, a fluorescent material, a luminescent material, a bioluminescent material, and a radioactive material.

20   The invention also provides a kit containing an antibody of the invention conjugated to a detectable substance, and instructions for use. Still another aspect of the invention is a pharmaceutical composition comprising an antibody of the invention and a pharmaceutically acceptable carrier. In preferred embodiments, the pharmaceutical composition contains an antibody of the invention, a therapeutic moiety, and a

25   pharmaceutically acceptable carrier.

Still another aspect of the invention is a method of making an antibody that specifically recognizes a polypeptide of the present invention, the method comprising immunizing a mammal with a polypeptide. The polypeptide used as an immungen comprises an amino acid sequence selected from the group consisting of the amino acid

30   sequence of the present invention, an amino acid sequence encoded by the cDNA of the nucleic acid molecules of the present invention, a fragment of at least 15 amino acid residues of the amino acid sequence of the present invention, an amino acid sequence

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which is at least 95% identical to the amino acid sequence of the present invention (wherein the percent identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid

5   molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C.

After immunization, a sample is collected from the mammal that contains an antibody that specifically recognizes the polypeptide. Preferably, the polypeptide is

10   recombinantly produced using a non-human host cell. Optionally, the antibodies can be further purified from the sample using techniques well known to those of skill in the art. The method can further comprise producing a monoclonal antibody- producing cell from the cells of the mammal. Optionally, antibodies are collected from the antibody-producing cell.

15

III. Recombinant Expression Vectors and Host Cells

Another aspect of the invention pertains to vectors, preferably expression vectors, containing a nucleic acid encoding a polypeptide corresponding to a marker of the invention (or a portion of such a polypeptide). As used herein, the term "vector"

20   refers to a nucleic acid molecule capable of transporting another nucleic acid to which it has been linked. One type of vector is a "plasmid", which refers to a circular double stranded DNA loop into which additional DNA segments can be ligated. Another type of vector is a viral vector, wherein additional DNA segments can be ligated into the viral genome. Certain vectors are capable of autonomous replication in a host cell into which

25   they are introduced (e.g., bacterial vectors having a bacterial origin of replication and episomal mammalian vectors). Other vectors (e.g., non-episomal mammalian vectors) are integrated into the genome of a host cell upon introduction into the host cell, and thereby are replicated along with the host genome. Moreover, certain vectors, namely expression vectors, are capable of directing the expression of genes to which they are

30   operably linked. In general, expression vectors of utility in recombinant DNA techniques are often in the form of plasmids (vectors). However, the invention is intended to include such other forms of expression vectors, such as viral vectors (e.g.,

replication defective retroviruses, adenoviruses and adeno-associated viruses), which serve equivalent functions.

The recombinant expression vectors of the invention comprise a nucleic acid of the invention in a form suitable for expression of the nucleic acid in a host cell. This

5   means that the recombinant expression vectors include one or more regulatory sequences, selected on the basis of the host cells to be used for expression, which is operably linked to the nucleic acid sequence to be expressed. Within a recombinant expression vector, "operably linked" is intended to mean that the nucleotide sequence of interest is linked to the regulatory sequence(s) in a manner which allows for expression

10   of the nucleotide sequence (*e.g.*, in an *in vitro* transcription/translation system or in a host cell when the vector is introduced into the host cell). The term "regulatory sequence" is intended to include promoters, enhancers and other expression control elements (*e.g.*, polyadenylation signals). Such regulatory sequences are described, for example, in Goeddel, *Methods in Enzymology: Gene Expression Technology* vol.185,

15   Academic Press, San Diego, CA (1991). Regulatory sequences include those which direct constitutive expression of a nucleotide sequence in many types of host cell and those which direct expression of the nucleotide sequence only in certain host cells (*e.g.*, tissue-specific regulatory sequences). It will be appreciated by those skilled in the art that the design of the expression vector can depend on such factors as the choice of the

20   host cell to be transformed, the level of expression of protein desired, and the like. The expression vectors of the invention can be introduced into host cells to thereby produce proteins or peptides, including fusion proteins or peptides, encoded by nucleic acids as described herein.

The recombinant expression vectors of the invention can be designed for

25   expression of a polypeptide corresponding to a marker of the invention in prokaryotic (*e.g.*, *E. coli*) or eukaryotic cells (*e.g.*, insect cells {using baculovirus expression vectors}, yeast cells or mammalian cells). Suitable host cells are discussed further in Goeddel, *supra*. Alternatively, the recombinant expression vector can be transcribed and translated *in vitro*, for example using T7 promoter regulatory sequences and T7

30   polymerase.

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Expression of proteins in prokaryotes is most often carried out in *E. coli* with vectors containing constitutive or inducible promoters directing the expression of either fusion or non-fusion proteins. Fusion vectors add a number of amino acids to a protein encoded therein, usually to the amino terminus of the recombinant protein. Such fusion

5   vectors typically serve three purposes: 1) to increase expression of recombinant protein; 2) to increase the solubility of the recombinant protein; and 3) to aid in the purification of the recombinant protein by acting as a ligand in affinity purification. Often, in fusion expression vectors, a proteolytic cleavage site is introduced at the junction of the fusion moiety and the recombinant protein to enable separation of the recombinant protein

10   from the fusion moiety subsequent to purification of the fusion protein. Such enzymes, and their cognate recognition sequences, include Factor Xa, thrombin and enterokinase. Typical fusion expression vectors include pGEX (Pharmacia Biotech Inc; Smith and Johnson, 1988, *Gene* 67:31-40), pMAL (New England Biolabs, Beverly, MA) and pRIT5 (Pharmacia, Piscataway, NJ) which fuse glutathione S-transferase (GST),

15   maltose E binding protein, or protein A, respectively, to the target recombinant protein.

Examples of suitable inducible non-fusion *E. coli* expression vectors include pTrc (Amann *et al.*, 1988, *Gene* 69:301-315) and pET 11d (Studier *et al.*, p. 60-89, In *Gene Expression Technology: Methods in Enzymology* vol.185, Academic Press, San Diego, CA, 1991). Target gene expression from the pTrc vector relies on host RNA

20   polymerase transcription from a hybrid trp-lac fusion promoter. Target gene expression from the pET 11d vector relies on transcription from a T7 gn10-lac fusion promoter mediated by a co-expressed viral RNA polymerase (T7 gn1). This viral polymerase is supplied by host strains BL21(DE3) or HMS174(DE3) from a resident prophage harboring a T7 gn1 gene under the transcriptional control of the lacUV 5 promoter.

25   One strategy to maximize recombinant protein expression in *E. coli* is to express the protein in a host bacteria with an impaired capacity to proteolytically cleave the recombinant protein (Gottesman, p. 119-128, In *Gene Expression Technology: Methods in Enzymology* vol. 185, Academic Press, San Diego, CA, 1990. Another strategy is to alter the nucleic acid sequence of the nucleic acid to be inserted into an expression

30   vector so that the individual codons for each amino acid are those preferentially utilized in *E. coli* (Wada *et al.*, 1992, *Nucleic Acids Res.* 20:2111-2118). Such alteration of

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nucleic acid sequences of the invention can be carried out by standard DNA synthesis techniques.

In another embodiment, the expression vector is a yeast expression vector. Examples of vectors for expression in yeast *S. cerevisiae* include pYepSec1 (Baldari *et al.*, 1987, *EMBO J.* 6:229-234), pMFa (Kurjan and Herskowitz, 1982, *Cell* 30:933-943), pJRY88 (Schultz *et al.*, 1987, *Gene* 54:113-123), pYES2 (Invitrogen Corporation, San Diego, CA), and pPicZ (Invitrogen Corp, San Diego, CA).

Alternatively, the expression vector is a baculovirus expression vector. Baculovirus vectors available for expression of proteins in cultured insect cells (*e.g.*, Sf 9 cells) include the pAc series (Smith *et al.*, 1983, *Mol. Cell Biol.* 3:2156-2165) and the pVL series (Lucklow and Summers, 1989, *Virology* 170:31-39).

In yet another embodiment, a nucleic acid of the invention is expressed in mammalian cells using a mammalian expression vector. Examples of mammalian expression vectors include pCDM8 (Seed, 1987, *Nature* 329:840) and pMT2PC (Kaufman *et al.*, 1987, *EMBO J.* 6:187-195). When used in mammalian cells, the expression vector's control functions are often provided by viral regulatory elements. For example, commonly used promoters are derived from polyoma, Adenovirus 2, cytomegalovirus and Simian Virus 40. For other suitable expression systems for both prokaryotic and eukaryotic cells see chapters 16 and 17 of Sambrook *et al., supra.*

In another embodiment, the recombinant mammalian expression vector is capable of directing expression of the nucleic acid preferentially in a particular cell type (*e.g.*, tissue-specific regulatory elements are used to express the nucleic acid). Tissue-specific regulatory elements are known in the art. Non-limiting examples of suitable tissue-specific promoters include the albumin promoter (liver-specific; Pinkert *et al.*, 1987, *Genes Dev.* 1:268-277), lymphoid-specific promoters (Calame and Eaton, 1988, *Adv. Immunol.* 43:235-275), in particular promoters of T cell receptors (Winoto and Baltimore, 1989, *EMBO J.* 8:729-733) and immunoglobulins (Banerji *et al.*, 1983, *Cell* 33:729-740; Queen and Baltimore, 1983, *Cell* 33:741-748), neuron-specific promoters (*e.g.*, the neurofilament promoter; Byrne and Ruddle, 1989, *Proc. Natl. Acad. Sci. USA* 86:5473-5477), pancreas-specific promoters (Edlund *et al.*, 1985, *Science* 230:912-916), and mammary gland-specific promoters (*e.g.*, milk whey promoter; U.S. Patent No. 4,873,316 and European Application Publication No. 264,166). Developmentally-

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regulated promoters are also encompassed, for example the murine hox promoters (Kessel and Gruss, 1990, *Science* 249:374-379) and the α-fetoprotein promoter (Camper and Tilghman, 1989, *Genes Dev.* 3:537-546).

The invention further provides a recombinant expression vector comprising a
5   DNA molecule of the invention cloned into the expression vector in an antisense orientation. That is, the DNA molecule is operably linked to a regulatory sequence in a manner which allows for expression (by transcription of the DNA molecule) of an RNA molecule which is antisense to the mRNA encoding a polypeptide of the invention. Regulatory sequences operably linked to a nucleic acid cloned in the antisense
10   orientation can be chosen which direct the continuous expression of the antisense RNA molecule in a variety of cell types, for instance viral promoters and/or enhancers, or regulatory sequences can be chosen which direct constitutive, tissue-specific or cell type specific expression of antisense RNA. The antisense expression vector can be in the form of a recombinant plasmid, phagemid, or attenuated virus in which antisense nucleic
15   acids are produced under the control of a high efficiency regulatory region, the activity of which can be determined by the cell type into which the vector is introduced. For a discussion of the regulation of gene expression using antisense genes see Weintraub *et al.*, 1986, *Trends in Genetics*, Vol. 1(1).

Another aspect of the invention pertains to host cells into which a recombinant
20   expression vector of the invention has been introduced. The terms "host cell" and "recombinant host cell" are used interchangeably herein. It is understood that such terms refer not only to the particular subject cell but to the progeny or potential progeny of such a cell. Because certain modifications may occur in succeeding generations due to either mutation or environmental influences, such progeny may not, in fact, be
25   identical to the parent cell, but are still included within the scope of the term as used herein.

A host cell can be any prokaryotic (*e.g.*, *E. coli*) or eukaryotic cell (*e.g.*, insect cells, yeast or mammalian cells).

Vector DNA can be introduced into prokaryotic or eukaryotic cells via
30   conventional transformation or transfection techniques. As used herein, the terms "transformation" and "transfection" are intended to refer to a variety of art-recognized techniques for introducing foreign nucleic acid into a host cell, including calcium

phosphate or calcium chloride co-precipitation, DEAE-dextran-mediated transfection, lipofection, or electroporation. Suitable methods for transforming or transfecting host cells can be found in Sambrook, *et al.* (*supra*), and other laboratory manuals.

For stable transfection of mammalian cells, it is known that, depending upon the

5   expression vector and transfection technique used, only a small fraction of cells may integrate the foreign DNA into their genome. In order to identify and select these integrants, a gene that encodes a selectable marker (*e.g.*, for resistance to antibiotics) is generally introduced into the host cells along with the gene of interest. Preferred selectable markers include those which confer resistance to drugs, such as G418,

10 hygromycin and methotrexate. Cells stably transfected with the introduced nucleic acid can be identified by drug selection (*e.g.*, cells that have incorporated the selectable marker gene will survive, while the other cells die).

A host cell of the invention, such as a prokaryotic or eukaryotic host cell in culture, can be used to produce a polypeptide corresponding to a marker of the

15 invention. Accordingly, the invention further provides methods for producing a polypeptide corresponding to a marker of the invention using the host cells of the invention. In one embodiment, the method comprises culturing the host cell of invention (into which a recombinant expression vector encoding a polypeptide of the invention has been introduced) in a suitable medium such that the marker is produced.

20 In another embodiment, the method further comprises isolating the marker polypeptide from the medium or the host cell.

The host cells of the invention can also be used to produce nonhuman transgenic animals. For example, in one embodiment, a host cell of the invention is a fertilized oocyte or an embryonic stem cell into which a sequences encoding a polypeptide

25 corresponding to a marker of the invention have been introduced. Such host cells can then be used to create non-human transgenic animals in which exogenous sequences encoding a marker protein of the invention have been introduced into their genome or homologous recombinant animals in which endogenous gene(s) encoding a polypeptide corresponding to a marker of the invention sequences have been altered. Such animals

30 are useful for studying the function and/or activity of the polypeptide corresponding to the marker and for identifying and/or evaluating modulators of polypeptide activity. As used herein, a "transgenic animal" is a non-human animal, preferably a mammal, more

preferably a rodent such as a rat or mouse, in which one or more of the cells of the animal includes a transgene. Other examples of transgenic animals include non-human primates, sheep, dogs, cows, goats, chickens, amphibians, etc. A transgene is exogenous DNA which is integrated into the genome of a cell from which a transgenic animal

5   develops and which remains in the genome of the mature animal, thereby directing the expression of an encoded gene product in one or more cell types or tissues of the transgenic animal. As used herein, an "homologous recombinant animal" is a non-human animal, preferably a mammal, more preferably a mouse, in which an endogenous gene has been altered by homologous recombination between the endogenous gene and

10   an exogenous DNA molecule introduced into a cell of the animal, e.g., an embryonic cell of the animal, prior to development of the animal.

A transgenic animal of the invention can be created by introducing a nucleic acid encoding a polypeptide corresponding to a marker of the invention into the male pronuclei of a fertilized oocyte, e.g., by microinjection, retroviral infection, and allowing

15   the oocyte to develop in a pseudopregnant female foster animal. Intronic sequences and polyadenylation signals can also be included in the transgene to increase the efficiency of expression of the transgene. A tissue-specific regulatory sequence(s) can be operably linked to the transgene to direct expression of the polypeptide of the invention to particular cells. Methods for generating transgenic animals via embryo manipulation

20   and microinjection, particularly animals such as mice, have become conventional in the art and are described, for example, in U.S. Patent Nos. 4,736,866 and 4,870,009, U.S. Patent No. 4,873,191 and in Hogan, *Manipulating the Mouse Embryo*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., 1986. Similar methods are used for production of other transgenic animals. A transgenic founder animal can be identified

25   based upon the presence of the transgene in its genome and/or expression of mRNA encoding the transgene in tissues or cells of the animals. A transgenic founder animal can then be used to breed additional animals carrying the transgene. Moreover, transgenic animals carrying the transgene can further be bred to other transgenic animals carrying other transgenes.

30   To create an homologous recombinant animal, a vector is prepared which contains at least a portion of a gene encoding a polypeptide corresponding to a marker of the invention into which a deletion, addition or substitution has been introduced to

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thereby alter, *e.g.*, functionally disrupt, the gene. In a preferred embodiment, the vector is designed such that, upon homologous recombination, the endogenous gene is functionally disrupted (*i.e.*, no·longer encodes a functional protein; also referred to as a "knock out" vector). Alternatively, the vector can be designed such that, upon

5   homologous recombination, the endogenous gene is mutated or otherwise altered but still encodes functional protein (*e.g.*, the upstream regulatory region can be altered to thereby alter the expression of the endogenous protein). In the homologous recombination vector, the altered portion of the gene is flanked at its 5' and 3' ends by additional nucleic acid of the gene to allow for homologous recombination to occur

10   between the exogenous gene carried by the vector and an endogenous gene in an embryonic stem cell. The additional flanking nucleic acid sequences are of sufficient length for successful homologous recombination with the endogenous gene. Typically, several kilobases of flanking DNA (both at the 5' and 3' ends) are included in the vector (see, *e.g.*, Thomas and Capecchi, 1987, *Cell* 51:503 for a description of homologous

15   recombination vectors). The vector is introduced into an embryonic stem cell line (*e.g.*, by electroporation) and cells in which the introduced gene has homologously recombined with the endogenous gene are selected (see, *e.g.*, Li *et al.*, 1992, *Cell* 69:915). The selected cells are then injected into a blastocyst of an animal (*e.g.*, a mouse) to form aggregation chimeras (see, *e.g.*, Bradley, *Teratocarcinomas and*

20   *Embryonic Stem Cells: A Practical Approach*, Robertson, Ed., IRL, Oxford, 1987, pp. 113-152). A chimeric embryo can then be implanted into a suitable pseudopregnant female foster animal and the embryo brought to term. Progeny harboring the homologously recombined DNA in their germ cells can be used to breed animals in which all cells of the animal contain the homologously recombined DNA by germline

25   transmission of the transgene. Methods for constructing homologous recombination vectors and homologous recombinant animals are described further in Bradley (1991) *Current Opinion in Bio/Technology* 2:823-829 and in PCT Publication NOS. WO 90/11354, WO 91/01140, WO 92/0968, and WO 93/04169.

In another embodiment, transgenic non-human animals can be produced which
30   contain selected systems which allow for regulated expression of the transgene. One example of such a system is the *cre/loxP* recombinase system of bacteriophage P1. For a description of the *cre/loxP* recombinase system, see, *e.g.*, Lakso *et al.* (1992) *Proc.*

Natl. Acad. Sci. USA 89:6232-6236. Another example of a recombinase system is the FLP recombinase system of *Saccharomyces cerevisiae* (O'Gorman *et al.*, 1991, *Science* 251:1351-1355). If a *cre/loxP* recombinase system is used to regulate expression of the transgene, animals containing transgenes encoding both the *Cre* recombinase and a selected protein are required. Such animals can be provided through the construction of "double" transgenic animals, *e.g.*, by mating two transgenic animals, one containing a transgene encoding a selected protein and the other containing a transgene encoding a recombinase.

Clones of the non-human transgenic animals described herein can also be produced according to the methods described in Wilmut *et al.* (1997) *Nature* 385:810-813 and PCT Publication NOS. WO 97/07668 and WO 97/07669.

IV. Pharmaceutical Compositions

The nucleic acid molecules, polypeptides, and antibodies (also referred to herein as "active compounds") corresponding to a marker of the invention can be incorporated into pharmaceutical compositions suitable for administration. Such compositions typically comprise the nucleic acid molecule, protein, or antibody and a pharmaceutically acceptable carrier. As used herein the language "pharmaceutically acceptable carrier" is intended to include any and all solvents, dispersion media, coatings, antibacterial and antifungal agents, isotonic and absorption delaying agents, and the like, compatible with pharmaceutical administration. The use of such media and agents for pharmaceutically active substances is well known in the art. Except insofar as any conventional media or agent is incompatible with the active compound, use thereof in the compositions is contemplated. Supplementary active compounds can also be incorporated into the compositions.

The invention includes methods for preparing pharmaceutical compositions for modulating the expression or activity of a polypeptide or nucleic acid corresponding to a marker of the invention. Such methods comprise formulating a pharmaceutically acceptable carrier with an agent which modulates expression or activity of a polypeptide or nucleic acid corresponding to a marker of the invention. Such compositions can further include additional active agents. Thus, the invention further includes methods for preparing a pharmaceutical composition by formulating a pharmaceutically

acceptable carrier with an agent which modulates expression or activity of a polypeptide or nucleic acid corresponding to a marker of the invention and one or more additional active compounds.

The invention also provides methods (also referred to herein as

5   "screening assays") for identifying modulators, *i.e.*, candidate or test compounds or agents (*e.g.*, peptides, peptidomimetics, peptoids, small molecules or other drugs) which (a) bind to the marker, or (b) have a modulatory (*e.g.*, stimulatory or inhibitory) effect on the activity of the marker or, more specifically, (c) have a modulatory effect on the interactions of the marker with one or more of its natural substrates (*e.g.*, peptide,

10 protein, hormone, co-factor, or nucleic acid), or (d) have a modulatory effect on the expression of the marker. Such assays typically comprise a reaction between the marker and one or more assay components. The other components may be either the test compound itself, or a combination of test compound and a natural binding partner of the marker.

15   The test compounds of the present invention may be obtained from any available source, including systematic libraries of natural and/or synthetic compounds. Test compounds may also be obtained by any of the numerous approaches in combinatorial library methods known in the art, including: biological libraries; peptoid libraries (libraries of molecules having the functionalities of peptides, but with a novel, non-

20 peptide backbone which are resistant to enzymatic degradation but which nevertheless remain bioactive; see, *e.g.*, Zuckermann *et al.*, 1994, *J. Med. Chem.* 37:2678-85); spatially addressable parallel solid phase or solution phase libraries; synthetic library methods requiring deconvolution; the 'one-bead one-compound' library method; and synthetic library methods using affinity chromatography selection. The biological

25 library and peptoid library approaches are limited to peptide libraries, while the other four approaches are applicable to peptide, non-peptide oligomer or small molecule libraries of compounds (Lam, 1997, *Anticancer Drug Des.* 12:145).

Examples of methods for the synthesis of molecular libraries can be found in the art, for example in: DeWitt *et al.* (1993) *Proc. Natl. Acad. Sci. U.S.A.* 90:6909; Erb *et*

30 *al.* (1994) *Proc. Natl. Acad. Sci. USA* 91:11422; Zuckermann *et al.* (1994). *J. Med. Chem.* 37:2678; Cho *et al.* (1993) *Science* 261:1303; Carrell *et al.* (1994) *Angew. Chem.*

Int. Ed. Engl. 33:2059; Carell *et al.* (1994) *Angew. Chem. Int. Ed. Engl.* 33:2061; and in Gallop *et al.* (1994) *J. Med. Chem.* 37:1233.

Libraries of compounds may be presented in solution (*e.g.,* Houghten, 1992, *Biotechniques* 13:412-421), or on beads (Lam, 1991, *Nature* 354:82-84), chips (Fodor,

5   1993, *Nature* 364:555-556), bacteria and/or spores, (Ladner, USP 5,223,409), plasmids (Cull *et al*, 1992, *Proc Natl Acad Sci USA* 89:1865-1869) or on phage (Scott and Smith, 1990, *Science* 249:386-390; Devlin, 1990, *Science* 249:404-406; Cwirla *et al*, 1990, *Proc. Natl. Acad. Sci.* 87:6378-6382; Felici, 1991, *J. Mol. Biol.* 222:301-310; Ladner, *supra.*).

10   In one embodiment, the invention provides assays for screening candidate or test compounds which are substrates of a marker or biologically active portion thereof. In another embodiment, the invention provides assays for screening candidate or test compounds which bind to a marker or biologically active portion thereof. Determining the ability of the test compound to directly bind to a marker can be accomplished, for

15   example, by coupling the compound with a radioisotope or enzymatic label such that binding of the compound to the marker can be determined by detecting the labeled marker compound in a complex. For example, compounds (*e.g.,* marker substrates) can be labeled with ^{125}I, ^{35}S, ^{14}C, or ^{3}H, either directly or indirectly, and the radioisotope detected by direct counting of radioemission or by scintillation counting. Alternatively,

20   assay components can be enzymatically labeled with, for example, horseradish peroxidase, alkaline phosphatase, or luciferase, and the enzymatic label detected by determination of conversion of an appropriate substrate to product.

In another embodiment, the invention provides assays for screening candidate or test compounds which modulate the activity of a marker or a biologically active portion

25   thereof. In all likelihood, the marker can, *in vivo*, interact with one or more molecules, such as but not limited to, peptides, proteins, hormones, cofactors and nucleic acids. For the purposes of this discussion, such cellular and extracellular molecules are referred to herein as "binding partners" or marker "substrate".

One necessary embodiment of the invention in order to facilitate such screening

30   is the use of the marker to identify its natural *in vivo* binding partners. There are many ways to accomplish this which are known to one skilled in the art. One example is the use of the marker protein as "bait protein" in a two-hybrid assay or three-hybrid assay

(see, e.g., U.S. Patent No. 5,283,317; Zervos et al, 1993, Cell 72:223-232; Madura et al, 1993, J. Biol. Chem. 268:12046-12054; Bartel et al ,1993, Biotechniques 14:920-924; Iwabuchi et al, 1993 Oncogene 8:1693-1696; Brent WO94/10300) in order to identify other proteins which bind to or interact with the marker (binding partners) and,

5   therefore, are possibly involved in the natural function of the marker. Such marker binding partners are also likely to be involved in the propagation of signals by the marker or downstream elements of a marker-mediated signaling pathway. Alternatively, such marker binding partners may also be found to be inhibitors of the marker.

The two-hybrid system is based on the modular nature of most transcription

10   factors, which consist of separable DNA-binding and activation domains. Briefly, the assay utilizes two different DNA constructs. In one construct, the gene that encodes a marker protein fused to a gene encoding the DNA binding domain of a known transcription factor (e.g., GAL-4). In the other construct, a DNA sequence, from a library of DNA sequences, that encodes an unidentified protein ("prey" or "sample") is

15   fused to a gene that codes for the activation domain of the known transcription factor. If the "bait" and the "prey" proteins are able to interact, in vivo, forming a marker-dependent complex, the DNA-binding and activation domains of the transcription factor are brought into close proximity. This proximity allows transcription of a reporter gene (e.g., LacZ) which is operably linked to a transcriptional regulatory site responsive to

20   the transcription factor. Expression of the reporter gene can be readily detected and cell colonies containing the functional transcription factor can be isolated and used to obtain the cloned gene which encodes the protein which interacts with the marker protein.

In a further embodiment, assays may be devised through the use of the invention for the purpose of identifying compounds which modulate (e.g., affect either positively

25   or negatively) interactions between a marker and its substrates and/or binding partners. Such compounds can include, but are not limited to, molecules such as antibodies, peptides, hormones, oligonucleotides, nucleic acids, and analogs thereof. Such compounds may also be obtained from any available source, including systematic libraries of natural and/or synthetic compounds. The preferred assay components for use

30   in this embodiment is an ovarian cancer marker identified herein, the known binding partner and/or substrate of same, and the test compound. Test compounds can be supplied from any source.

The basic principle of the assay systems used to identify compounds that interfere with the interaction between the marker and its binding partner involves preparing a reaction mixture containing the marker and its binding partner under conditions and for a time sufficient to allow the two products to interact and bind, thus

5   forming a complex. In order to test an agent for inhibitory activity, the reaction mixture is prepared in the presence and absence of the test compound. The test compound can be initially included in the reaction mixture, or can be added at a time subsequent to the addition of the marker and its binding partner. Control reaction mixtures are incubated without the test compound or with a placebo. The formation of any complexes between

10   the marker and its binding partner is then detected. The formation of a complex in the control reaction, but less or no such formation in the reaction mixture containing the test compound, indicates that the compound interferes with the interaction of the marker and its binding partner. Conversely, the formation of more complex in the presence of compound than in the control reaction indicates that the compound may enhance

15   interaction of the marker and its binding partner.

The assay for compounds that interfere with the interaction of the marker with its binding partner may be conducted in a heterogeneous or homogeneous format. Heterogeneous assays involve anchoring either the marker or its binding partner onto a solid phase and detecting complexes anchored to the solid phase at the end of the

20   reaction. In homogeneous assays, the entire reaction is carried out in a liquid phase. In either approach, the order of addition of reactants can be varied to obtain different information about the compounds being tested. For example, test compounds that interfere with the interaction between the markers and the binding partners (*e.g.*, by competition) can be identified by conducting the reaction in the presence of the test

25   substance, *i.e.*, by adding the test substance to the reaction mixture prior to or simultaneously with the marker and its interactive binding partner. Alternatively, test compounds that disrupt preformed complexes, *e.g.*, compounds with higher binding constants that displace one of the components from the complex, can be tested by adding the test compound to the reaction mixture after complexes have been formed. The

30   various formats are briefly described below.

In a heterogeneous assay system, either the marker or its binding partner is anchored onto a solid surface or matrix, while the other corresponding non-anchored component may be labeled, either directly or indirectly. In practice, microtitre plates are often utilized for this approach. The anchored species can be immobilized by a number

5   of methods, either non-covalent or covalent, that are typically well known to one who practices the art. Non-covalent attachment can often be accomplished simply by coating the solid surface with a solution of the marker or its binding partner and drying. Alternatively, an immobilized antibody specific for the assay component to be anchored can be used for this purpose. Such surfaces can often be prepared in advance and stored.

10   In related embodiments, a fusion protein can be provided which adds a domain that allows one or both of the assay components to be anchored to a matrix. For example, glutathione-S-transferase/marker fusion proteins or glutathione-S-transferase/binding partner can be adsorbed onto glutathione sepharose beads (Sigma Chemical, St. Louis, MO) or glutathione derivatized microtiter plates, which are then

15   combined with the test compound or the test compound and either the non-adsorbed marker or its binding partner, and the mixture incubated under conditions conducive to complex formation (e.g., physiological conditions). Following incubation, the beads or microtiter plate wells are washed to remove any unbound assay components, the immobilized complex assessed either directly or indirectly, for example, as described

20   above. Alternatively, the complexes can be dissociated from the matrix, and the level of marker binding or activity determined using standard techniques.

Other techniques for immobilizing proteins on matrices can also be used in the screening assays of the invention. For example, either a marker or a marker binding partner can be immobilized utilizing conjugation of biotin and streptavidin. Biotinylated

25   marker protein or target molecules can be prepared from biotin-NHS (N-hydroxy-succinimide) using techniques known in the art (e.g., biotinylation kit, Pierce Chemicals, Rockford, IL), and immobilized in the wells of streptavidin-coated 96 well plates (Pierce Chemical). In certain embodiments, the protein-immobilized surfaces can be prepared in advance and stored.

30   In order to conduct the assay, the corresponding partner of the immobilized assay component is exposed to the coated surface with or without the test compound. After the reaction is complete, unreacted assay components are removed (e.g., by washing)

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and any complexes formed will remain immobilized on the solid surface. The detection of complexes anchored on the solid surface can be accomplished in a number of ways. Where the non-immobilized component is pre-labeled, the detection of label immobilized on the surface indicates that complexes were formed. Where the non-

5   immobilized component is not pre-labeled, an indirect label can be used to detect complexes anchored on the surface; e.g., using a labeled antibody specific for the initially non-immobilized species (the antibody, in turn, can be directly labeled or indirectly labeled with, e.g., a labeled anti-Ig antibody). Depending upon the order of addition of reaction components, test compounds which modulate (inhibit or enhance)

10   complex formation or which disrupt preformed complexes can be detected.

In an alternate embodiment of the invention, a homogeneous assay may be used. This is typically a reaction, analogous to those mentioned above, which is conducted in a liquid phase in the presence or absence of the test compound. The formed complexes are then separated from unreacted components, and the amount of complex formed is

15   determined. As mentioned for heterogeneous assay systems, the order of addition of reactants to the liquid phase can yield information about which test compounds modulate (inhibit or enhance) complex formation and which disrupt preformed complexes.

In such a homogeneous assay, the reaction products may be separated from

20   unreacted assay components by any of a number of standard techniques, including but not limited to: differential centrifugation, chromatography, electrophoresis and immunoprecipitation. In differential centrifugation, complexes of molecules may be separated from uncomplexed molecules through a series of centrifugal steps, due to the different sedimentation equilibria of complexes based on their different sizes and

25   densities (see, for example, Rivas, G., and Minton, A.P., *Trends Biochem Sci* 1993 Aug;18(8):284-7). Standard chromatographic techniques may also be utilized to separate complexed molecules from uncomplexed ones. For example, gel filtration chromatography separates molecules based on size, and through the utilization of an appropriate gel filtration resin in a column format, for example, the relatively larger

30   complex may be separated from the relatively smaller uncomplexed components. Similarly, the relatively different charge properties of the complex as compared to the uncomplexed molecules may be exploited to differentially separate the complex from

the remaining individual reactants, for example through the use of ion-exchange

chromatography resins. Such resins and chromatographic techniques are well known to

one skilled in the art (see, e.g., Heegaard, 1998, *J Mol. Recognit.* 11:141-148; Hage and

Tweed, 1997, *J. Chromatogr. B. Biomed. Sci. Appl.*, 699:499-525). Gel electrophoresis

5   may also be employed to separate complexed molecules from unbound species (see,

e.g., Ausubel *et al* (eds.), In: Current Protocols in Molecular Biology, J. Wiley & Sons,

New York. 1999). In this technique, protein or nucleic acid complexes are separated

based on size or charge, for example. In order to maintain the binding interaction during

the electrophoretic process, nondenaturing gels in the absence of reducing agent are

10   typically preferred, but conditions appropriate to the particular interactants will be well

known to one skilled in the art. Immunoprecipitation is another common technique

utilized for the isolation of a protein-protein complex from solution (see, e.g., Ausubel *et*

al (eds.), In: Current Protocols in Molecular Biology, J. Wiley & Sons, New York.

1999). In this technique, all proteins binding to an antibody specific to one of the

15   binding molecules are precipitated from solution by conjugating the antibody to a

polymer bead that may be readily collected by centrifugation. The bound assay

components are released from the beads (through a specific proteolysis event or other

technique well known in the art which will not disturb the protein-protein interaction in

the complex), and a second immunoprecipitation step is performed, this time utilizing

20   antibodies specific for the correspondingly different interacting assay component. In this

manner, only formed complexes should remain attached to the beads. Variations in

complex formation in both the presence and the absence of a test compound can be

compared, thus offering information about the ability of the compound to modulate

interactions between the marker and its binding partner.

25   Also within the scope of the present invention are methods for direct detection of

interactions between the marker and its natural binding partner and/or a test compound

in a homogeneous or heterogeneous assay system without further sample manipulation.

For example, the technique of fluorescence energy transfer may be utilized (see, e.g.,

Lakowicz *et al*, U.S. Patent No. 5,631,169; Stavrianopoulos *et al*, U.S. Patent No.

30   4,868,103). Generally, this technique involves the addition of a fluorophore label on a

first 'donor' molecule (*e.g.*, marker or test compound) such that its emitted fluorescent

energy will be absorbed by a fluorescent label on a second, 'acceptor' molecule (*e.g.*,

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marker or test compound), which in turn is able to fluoresce due to the absorbed energy. Alternately, the 'donor' protein molecule may simply utilize the natural fluorescent energy of tryptophan residues. Labels are chosen that emit different wavelengths of light, such that the 'acceptor' molecule label may be differentiated from that of the

5   'donor'. Since the efficiency of energy transfer between the labels is related to the distance separating the molecules, spatial relationships between the molecules can be assessed. In a situation in which binding occurs between the molecules, the fluorescent emission of the 'acceptor' molecule label in the assay should be maximal. An FET binding event can be conveniently measured through standard fluorometric detection

10   means well known in the art (e.g., using a fluorimeter). A test substance which either enhances or hinders participation of one of the species in the preformed complex will result in the generation of a signal variant to that of background. In this way, test substances that modulate interactions between a marker and its binding partner can be identified in controlled assays.

15   In another embodiment, modulators of marker expression are identified in a method wherein a cell is contacted with a candidate compound and the expression of mRNA or protein, corresponding to a marker in the cell, is determined. The level of expression of mRNA or protein in the presence of the candidate compound is compared to the level of expression of mRNA or protein in the absence of the candidate

20   compound. The candidate compound can then be identified as a modulator of marker expression based on this comparison. For example, when expression of marker mRNA or protein is greater (statistically significantly greater) in the presence of the candidate compound than in its absence, the candidate compound is identified as a stimulator of marker mRNA or protein expression. Conversely, when expression of marker mRNA

25   or protein is less (statistically significantly less) in the presence of the candidate compound than in its absence, the candidate compound is identified as an inhibitor of marker mRNA or protein expression. The level of marker mRNA or protein expression in the cells can be determined by methods described herein for detecting marker mRNA or protein.

30   In another aspect, the invention pertains to a combination of two or more of the assays described herein. For example, a modulating agent can be identified using a cell-based or a cell free assay, and the ability of the agent to modulate the activity of a

marker protein can be further confirmed *in vivo, e.g.,* in a whole animal model for cellular transformation and/or tumorigenesis.

This invention further pertains to novel agents identified by the above-described screening assays. Accordingly, it is within the scope of this invention to further use an

5   agent identified as described herein in an appropriate animal model. For example, an agent identified as described herein (*e.g.,* an marker modulating agent, an antisense marker nucleic acid molecule, an marker-specific antibody, or an marker-binding partner) can be used in an animal model to determine the efficacy, toxicity, or side effects of treatment with such an agent. Alternatively, an agent identified as described

10   herein can be used in an animal model to determine the mechanism of action of such an agent. Furthermore, this invention pertains to uses of novel agents identified by the above-described screening assays for treatments as described herein.

It is understood that appropriate doses of small molecule agents and protein or polypeptide agents depends upon a number of factors within the knowledge of the

15   ordinarily skilled physician, veterinarian, or researcher. The dose(s) of these agents will vary, for example, depending upon the identity, size, and condition of the subject or sample being treated, further depending upon the route by which the composition is to be administered, if applicable, and the effect which the practitioner desires the agent to have upon the nucleic acid or polypeptide of the invention. Exemplary doses of a small

20   molecule include milligram or microgram amounts per kilogram of subject or sample weight (*e.g.* about 1 microgram per kilogram to about 500 milligrams per kilogram, about 100 micrograms per kilogram to about 5 milligrams per kilogram, or about 1 microgram per kilogram to about 50 micrograms per kilogram). Exemplary doses of a protein or polypeptide include gram, milligram or microgram amounts per kilogram of

25   subject or sample weight (*e.g.* about 1 microgram per kilogram to about 5 grams per kilogram, about 100 micrograms per kilogram to about 500 milligrams per kilogram, or about 1 milligram per kilogram to about 50 milligrams per kilogram). It is furthermore understood that appropriate doses of one of these agents depend upon the potency of the agent with respect to the expression or activity to be modulated. Such appropriate doses

30   can be determined using the assays described herein. When one or more of these agents is to be administered to an animal (*e.g.* a human) in order to modulate expression or activity of a polypeptide or nucleic acid of the invention, a physician, veterinarian, or

researcher can, for example, prescribe a relatively low dose at first, subsequently
increasing the dose until an appropriate response is obtained. In addition, it is
understood that the specific dose level for any particular animal subject will depend
upon a variety of factors including the activity of the specific agent employed, the age,
5   body weight, general health, gender, and diet of the subject, the time of administration,
the route of administration, the rate of excretion, any drug combination, and the degree
of expression or activity to be modulated.

A pharmaceutical composition of the invention is formulated to be compatible
with its intended route of administration. Examples of routes of administration include
10   parenteral, *e.g.*, intravenous, intradermal, subcutaneous, oral (*e.g.*, inhalation),
transdermal (topical), transmucosal, and rectal administration. Solutions or suspensions
used for parenteral, intradermal, or subcutaneous application can include the following
components: a sterile diluent such as water for injection, saline solution, fixed oils,
polyethylene glycols, glycerine, propylene glycol or other synthetic solvents;
15   antibacterial agents such as benzyl alcohol or methyl parabens; antioxidants such as
ascorbic acid or sodium bisulfite; chelating agents such as ethylenediamine-tetraacetic
acid; buffers such as acetates, citrates or phosphates and agents for the adjustment of
tonicity such as sodium chloride or dextrose. pH can be adjusted with acids or bases,
such as hydrochloric acid or sodium hydroxide. The parenteral preparation can be
20   enclosed in ampules, disposable syringes or multiple dose vials made of glass or plastic.

Pharmaceutical compositions suitable for injectable use include sterile aqueous
solutions (where water soluble) or dispersions and sterile powders for the
extemporaneous preparation of sterile injectable solutions or dispersions. For
intravenous administration, suitable carriers include physiological saline, bacteriostatic
25   water, Cremophor EL (BASF; Parsippany, NJ) or phosphate buffered saline (PBS). In
all cases, the composition must be sterile and should be fluid to the extent that easy
syringability exists. It must be stable under the conditions of manufacture and storage
and must be preserved against the contaminating action of microorganisms such as
bacteria and fungi. The carrier can be a solvent or dispersion medium containing, for
30   example, water, ethanol, polyol (for example, glycerol, propylene glycol, and liquid
polyethylene glycol, and the like), and suitable mixtures thereof. The proper fluidity can
be maintained, for example, by the use of a coating such as lecithin, by the maintenance

of the required particle size in the case of dispersion and by the use of surfactants. Prevention of the action of microorganisms can be achieved by various antibacterial and antifungal agents, for example, parabens, chlorobutanol, phenol, ascorbic acid, thimerosal, and the like. In many cases, it will be preferable to include isotonic agents,

5   for example, sugars, polyalcohols such as mannitol, sorbitol, or sodium chloride in the composition. Prolonged absorption of the injectable compositions can be brought about by including in the composition an agent which delays absorption, for example, aluminum monostearate and gelatin.

Sterile injectable solutions can be prepared by incorporating the active

10   compound (e.g., a polypeptide or antibody) in the required amount in an appropriate solvent with one or a combination of ingredients enumerated above, as required, followed by filtered sterilization. Generally, dispersions are prepared by incorporating the active compound into a sterile vehicle which contains a basic dispersion medium, and then incorporating the required other ingredients from those enumerated above. In

15   the case of sterile powders for the preparation of sterile injectable solutions, the preferred methods of preparation are vacuum drying and freeze-drying which yields a powder of the active ingredient plus any additional desired ingredient from a previously sterile-filtered solution thereof.

Oral compositions generally include an inert diluent or an edible carrier. They

20   can be enclosed in gelatin capsules or compressed into tablets. For the purpose of oral therapeutic administration, the active compound can be incorporated with excipients and used in the form of tablets, troches, or capsules. Oral compositions can also be prepared using a fluid carrier for use as a mouthwash, wherein the compound in the fluid carrier is applied orally and swished and expectorated or swallowed.

25   Pharmaceutically compatible binding agents, and/or adjuvant materials can be included as part of the composition. The tablets, pills, capsules, troches, and the like can contain any of the following ingredients, or compounds of a similar nature: a binder such as microcrystalline cellulose, gum tragacanth or gelatin; an excipient such as starch or lactose, a disintegrating agent such as alginic acid, Primogel, or corn starch; a

30   lubricant such as magnesium stearate or Sterotes; a glidant such as colloidal silicon dioxide; a sweetening agent such as sucrose or saccharin; or a flavoring agent such as peppermint, methyl salicylate, or orange flavoring.

For administration by inhalation, the compounds are delivered in the form of an aerosol spray from a pressurized container or dispenser which contains a suitable propellant, *e.g.*, a gas such as carbon dioxide, or a nebulizer.

Systemic administration can also be by transmucosal or transdermal means. For

5   transmucosal or transdermal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art, and include, for example, for transmucosal administration, detergents, bile salts, and fusidic acid derivatives. Transmucosal administration can be accomplished through the use of nasal sprays or suppositories. For transdermal administration, the active

10   compounds are formulated into ointments, salves, gels, or creams as generally known in the art.

The compounds can also be prepared in the form of suppositories (*e.g.*, with conventional suppository bases such as cocoa butter and other glycerides) or retention enemas for rectal delivery.

15   In one embodiment, the active compounds are prepared with carriers that will protect the compound against rapid elimination from the body, such as a controlled release formulation, including implants and microencapsulated delivery systems. Biodegradable, biocompatible polymers can be used, such as ethylene vinyl acetate, polyanhydrides, polyglycolic acid, collagen, polyorthoesters, and polylactic acid.

20   Methods for preparation of such formulations will be apparent to those skilled in the art. The materials can also be obtained commercially from Alza Corporation and Nova Pharmaceuticals, Inc. Liposomal suspensions (including liposomes having monoclonal antibodies incorporated therein or thereon) can also be used as pharmaceutically acceptable carriers. These can be prepared according to methods known to those skilled

25   in the art, for example, as described in U.S. Patent No. 4,522,811.

It is especially advantageous to formulate oral or parenteral compositions in dosage unit form for ease of administration and uniformity of dosage. Dosage unit form as used herein refers to physically discrete units suited as unitary dosages for the subject to be treated; each unit containing a predetermined quantity of active compound

30   calculated to produce the desired therapeutic effect in association with the required pharmaceutical carrier. The specification for the dosage unit forms of the invention are dictated by and directly dependent on the unique characteristics of the active compound

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and the particular therapeutic effect to be achieved, and the limitations inherent in the art of compounding such an active compound for the treatment of individuals.

For antibodies, the preferred dosage is 0.1 mg/kg to 100 mg/kg of body weight (generally 10 mg/kg to 20 mg/kg). If the antibody is to act in the brain, a dosage of 50
5   mg/kg to 100 mg/kg is usually appropriate. Generally, partially human antibodies and fully human antibodies have a longer half-life within the human body than other antibodies. Accordingly, lower dosages and less frequent administration is often possible. Modifications such as lipidation can be used to stabilize antibodies and to enhance uptake and tissue penetration (*e.g.*, into the ovarian epithelium). A method for
10   lipidation of antibodies is described by Cruikshank *et al.* (1997) *J. Acquired Immune Deficiency Syndromes and Human Retrovirology* 14:193.

The nucleic acid molecules corresponding to a marker of the invention can be inserted into vectors and used as gene therapy vectors. Gene therapy vectors can be delivered to a subject by, for example, intravenous injection, local administration (U.S.
15   Patent 5,328,470), or by stereotactic injection (see, *e.g.*, Chen *et al.*, 1994; *Proc. Natl. Acad. Sci. USA* 91:3054-3057). The pharmaceutical preparation of the gene therapy vector can include the gene therapy vector in an acceptable diluent, or can comprise a slow release matrix in which the gene delivery vehicle is imbedded. Alternatively, where the complete gene delivery vector can be produced intact from recombinant cells,
20   *e.g.* retroviral vectors, the pharmaceutical preparation can include one or more cells which produce the gene delivery system.

The pharmaceutical compositions can be included in a container, pack, or dispenser together with instructions for administration.

25   V. Predictive Medicine

The present invention pertains to the field of predictive medicine in which diagnostic assays, prognostic assays, pharmacogenomics, and monitoring clinical trails are used for prognostic (predictive) purposes to thereby treat an individual prophylactically. Accordingly, one aspect of the present invention relates to diagnostic
30   assays for determining the level of expression of polypeptides or nucleic acids corresponding to one or more markers of the invention, in order to determine whether an individual is at risk of developing ovarian cancer. Such assays can be used for

prognostic or predictive purposes to thereby prophylactically treat an individual prior to
the onset of the cancer.

Yet another aspect of the invention pertains to monitoring the influence of agents
(*e.g.*, drugs or other compounds administered either to inhibit ovarian cancer or to treat

5   or prevent any other disorder {*i.e.* in order to understand any ovarian carcinogenic
effects that such treatment may have}) on the expression or activity of a marker of the
invention in clinical trials. These and other agents are described in further detail in the
following sections.

10   A. Diagnostic Assays

An exemplary method for detecting the presence or absence of a polypeptide or
nucleic acid corresponding to a marker of the invention in a biological sample involves
obtaining a biological sample (*e.g.* an ovary-associated body fluid) from a test subject
and contacting the biological sample with a compound or an agent capable of detecting

15   the polypeptide or nucleic acid (*e.g.*, mRNA, genomic DNA, or cDNA). The detection
methods of the invention can thus be used to detect mRNA, protein, cDNA, or genomic
DNA, for example, in a biological sample *in vitro* as well as *in vivo*. For example, *in
vitro* techniques for detection of mRNA include Northern hybridizations and *in situ*
hybridizations. *In vitro* techniques for detection of a polypeptide corresponding to a

20   marker of the invention include enzyme linked immunosorbent assays (ELISAs),
Western blots, immunoprecipitations and immunofluorescence. *In vitro* techniques for
detection of genomic DNA include Southern hybridizations. Furthermore, *in vivo*
techniques for detection of a polypeptide corresponding to a marker of the invention
include introducing into a subject a labeled antibody directed against the polypeptide.

25   For example, the antibody can be labeled with a radioactive marker whose presence and
location in a subject can be detected by standard imaging techniques.

A general principle of such diagnostic and prognostic assays involves preparing
a sample or reaction mixture that may contain a marker, and a probe, under appropriate
conditions and for a time sufficient to allow the marker and probe to interact and bind,

30   thus forming a complex that can be removed and/or detected in the reaction mixture.
These assays can be conducted in a variety of ways.

For example, one method to conduct such an assay would involve anchoring the marker or probe onto a solid phase support, also referred to as a substrate, and detecting target marker/probe complexes anchored on the solid phase at the end of the reaction. In one embodiment of such a method, a sample from a subject, which is to be assayed

5   for presence and/or concentration of marker, can be anchored onto a carrier or solid phase support. In another embodiment, the reverse situation is possible, in which the probe can be anchored to a solid phase and a sample from a subject can be allowed to react as an unanchored component of the assay.

There are many established methods for anchoring assay components to a solid

10   phase. These include, without limitation, marker or probe molecules which are immobilized through conjugation of biotin and streptavidin. Such biotinylated assay components can be prepared from biotin-NHS (N-hydroxy-succinimide) using techniques known in the art (*e.g.*, biotinylation kit, Pierce Chemicals, Rockford, IL), and immobilized in the wells of streptavidin-coated 96 well plates (Pierce Chemical). In

15   certain embodiments, the surfaces with immobilized assay components can be prepared in advance and stored.

Other suitable carriers or solid phase supports for such assays include any material capable of binding the class of molecule to which the marker or probe belongs. Well-known supports or carriers include, but are not limited to, glass, polystyrene,

20   nylon, polypropylene, nylon, polyethylene, dextran, amylases, natural and modified celluloses, polyacrylamides, gabbros, and magnetite.

In order to conduct assays with the above mentioned approaches, the non-immobilized component is added to the solid phase upon which the second component is anchored. After the reaction is complete, uncomplexed components may be removed

25   (*e.g.*, by washing) under conditions such that any complexes formed will remain immobilized upon the solid phase. The detection of marker/probe complexes anchored to the solid phase can be accomplished in a number of methods outlined herein.

In a preferred embodiment, the probe, when it is the unanchored assay component, can be labeled for the purpose of detection and readout of the assay, either

30   directly or indirectly, with detectable labels discussed herein and which are well-known to one skilled in the art.

It is also possible to directly detect marker/probe complex formation without further manipulation or labeling of either component (marker or probe), for example by utilizing the technique of fluorescence energy transfer (see, for example, Lakowicz *et al.*, U.S. Patent No. 5,631,169; Stavrianopoulos, *et al.*, U.S. Patent No. 4,868,103). A

5   fluorophore label on the first, 'donor' molecule is selected such that, upon excitation with incident light of appropriate wavelength, its emitted fluorescent energy will be absorbed by a fluorescent label on a second 'acceptor' molecule, which in turn is able to fluoresce due to the absorbed energy. Alternately, the 'donor' protein molecule may simply utilize the natural fluorescent energy of tryptophan residues. Labels are chosen

10 that emit different wavelengths of light, such that the 'acceptor' molecule label may be differentiated from that of the 'donor'. Since the efficiency of energy transfer between the labels is related to the distance separating the molecules, spatial relationships between the molecules can be assessed. In a situation in which binding occurs between the molecules, the fluorescent emission of the 'acceptor' molecule label in the assay

15 should be maximal. An FET binding event can be conveniently measured through standard fluorometric detection means well known in the art (*e.g.*, using a fluorimeter).

In another embodiment, determination of the ability of a probe to recognize a marker can be accomplished without labeling either assay component (probe or marker) by utilizing a technology such as real-time Biomolecular Interaction Analysis (BIA)

20 (see, *e.g.*, Sjolander, S. and Urbaniczky, C., 1991, *Anal. Chem.* 63:2338-2345 and Szabo *et al.*, 1995, *Curr. Opin. Struct. Biol.* 5:699-705). As used herein, "BIA" or "surface plasmon resonance" is a technology for studying biospecific interactions in real time, without labeling any of the interactants (*e.g.*, BIAcore). Changes in the mass at the binding surface (indicative of a binding event) result in alterations of the refractive index

25 of light near the surface (the optical phenomenon of surface plasmon resonance (SPR)), resulting in a detectable signal which can be used as an indication of real-time reactions between biological molecules.

Alternatively, in another embodiment, analogous diagnostic and prognostic assays can be conducted with marker and probe as solutes in a liquid phase. In such an

30 assay, the complexed marker and probe are separated from uncomplexed components by any of a number of standard techniques, including but not limited to: differential. centrifugation, chromatography, electrophoresis and immunoprecipitation. In

differential centrifugation, marker/probe complexes may be separated from uncomplexed assay components through a series of centrifugal steps, due to the different sedimentation equilibria of complexes based on their different sizes and densities (see, for example, Rivas, G., and Minton, A.P., 1993, *Trends Biochem Sci.* 18(8):284-7).

5   Standard chromatographic techniques may also be utilized to separate complexed molecules from uncomplexed ones. For example, gel filtration chromatography separates molecules based on size, and through the utilization of an appropriate gel filtration resin in a column format, for example, the relatively larger complex may be separated from the relatively smaller uncomplexed components. Similarly, the

10   relatively different charge properties of the marker/probe complex as compared to the uncomplexed components may be exploited to differentiate the complex from uncomplexed components, for example through the utilization of ion-exchange chromatography resins. Such resins and chromatographic techniques are well known to one skilled in the art (see, *e.g.*, Heegaard, N.H., 1998, *J. Mol. Recognit.* Winter 11(1-

15   6):141-8; Hage, D.S., and Tweed, S.A. *J Chromatogr B Biomed Sci Appl* 1997 Oct 10;699(1-2):499-525). Gel electrophoresis may also be employed to separate complexed assay components from unbound components (see, *e.g.*, Ausubel *et al.*, ed., *Current Protocols in Molecular Biology*, John Wiley & Sons, New York, 1987-1999). In this technique, protein or nucleic acid complexes are separated based on size or

20   charge, for example. In order to maintain the binding interaction during the electrophoretic process, non-denaturing gel matrix materials and conditions in the absence of reducing agent are typically preferred. Appropriate conditions to the particular assay and components thereof will be well known to one skilled in the art.

In a particular embodiment, the level of mRNA corresponding to the marker can

25   be determined both by *in situ* and by *in vitro* formats in a biological sample using methods known in the art. The term "biological sample" is intended to include tissues, cells, biological fluids and isolates thereof, isolated from a subject, as well as tissues, cells and fluids present within a subject. Many expression detection methods use isolated RNA. For *in vitro* methods, any RNA isolation technique that does not select

30   against the isolation of mRNA can be utilized for the purification of RNA from ovarian cells (see, *e.g.*, Ausubel *et al.*, ed., *Current Protocols in Molecular Biology*, John Wiley & Sons, New York 1987-1999). Additionally, large numbers of tissue samples can

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readily be processed using techniques well known to those of skill in the art, such as, for example, the single-step RNA isolation process of Chomczynski (1989, U.S. Patent No. 4,843,155).

The isolated mRNA can be used in hybridization or amplification assays that
5   include, but are not limited to, Southern or Northern analyses, polymerase chain reaction analyses and probe arrays. One preferred diagnostic method for the detection of mRNA levels involves contacting the isolated mRNA with a nucleic acid molecule (probe) that can hybridize to the mRNA encoded by the gene being detected. The nucleic acid probe can be, for example, a full-length cDNA, or a portion thereof, such as an oligonucleotide
10 of at least 7, 15, 30, 50, 100, 250 or 500 nucleotides in length and sufficient to specifically hybridize under stringent conditions to a mRNA or genomic DNA encoding a marker of the present invention. Other suitable probes for use in the diagnostic assays of the invention are described herein. Hybridization of an mRNA with the probe indicates that the marker in question is being expressed.

15   In one format, the mRNA is immobilized on a solid surface and contacted with a probe, for example by running the isolated mRNA on an agarose gel and transferring the mRNA from the gel to a membrane, such as nitrocellulose. In an alternative format, the probe(s) are immobilized on a solid surface and the mRNA is contacted with the probe(s), for example, in an Affymetrix gene chip array. A skilled artisan can readily
20 adapt known mRNA detection methods for use in detecting the level of mRNA encoded by the markers of the present invention.

An alternative method for determining the level of mRNA corresponding to a marker of the present invention in a sample involves the process of nucleic acid amplification, e.g., by rtPCR (the experimental embodiment set forth in Mullis, 1987,
25 U.S. Patent No. 4,683,202), ligase chain reaction (Barany, 1991, *Proc. Natl. Acad. Sci. USA*, 88:189-193), self sustained sequence replication (Guatelli *et al.*, 1990, *Proc. Natl. Acad. Sci. USA* 87:1874-1878), transcriptional amplification system (Kwoh *et al.*, 1989, *Proc. Natl. Acad. Sci. USA* 86:1173-1177), Q-Beta Replicase (Lizardi *et al.*, 1988, *Bio/Technology* 6:1197), rolling circle replication (Lizardi *et al.*, U.S. Patent No.
30 5,854,033) or any other nucleic acid amplification method, followed by the detection of the amplified molecules using techniques well known to those of skill in the art. These detection schemes are especially useful for the detection of nucleic acid molecules if

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such molecules are present in very low numbers. As used herein, amplification primers are defined as being a pair of nucleic acid molecules that can anneal to 5' or 3' regions of a gene (plus and minus strands, respectively, or vice-versa) and contain a short region in between. In general, amplification primers are from about 10 to 30 nucleotides in

5   length and flank a region from about 50 to 200 nucleotides in length. Under appropriate conditions and with appropriate reagents, such primers permit the amplification of a nucleic acid molecule comprising the nucleotide sequence flanked by the primers.

For *in situ* methods, mRNA does not need to be isolated from the ovarian cells prior to detection. In such methods, a cell or tissue sample is prepared/processed using

10   known histological methods. The sample is then immobilized on a support, typically a glass slide, and then contacted with a probe that can hybridize to mRNA that encodes the marker.

As an alternative to making determinations based on the absolute expression level of the marker, determinations may be based on the normalized expression level of

15   the marker. Expression levels are normalized by correcting the absolute expression level of a marker by comparing its expression to the expression of a gene that is not a marker, *e.g.*, a housekeeping gene that is constitutively expressed. Suitable genes for normalization include housekeeping genes such as the actin gene, or epithelial cell-specific genes. This normalization allows the comparison of the expression level in one

20   sample, *e.g.*, a patient sample, to another sample, *e.g.*, a non-ovarian cancer sample, or between samples from different sources.

Alternatively, the expression level can be provided as a relative expression level. To determine a relative expression level of a marker, the level of expression of the marker is determined for 10 or more samples of normal versus cancer cell isolates,

25   preferably 50 or more samples, prior to the determination of the expression level for the sample in question. The mean expression level of each of the genes assayed in the larger number of samples is determined and this is used as a baseline expression level for the marker. The expression level of the marker determined for the test sample (absolute level of expression) is then divided by the mean expression value obtained for

30   that marker. This provides a relative expression level.

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Preferably, the samples used in the baseline determination will be from ovarian cancer or from non-ovarian cancer cells of ovarian tissue. The choice of the cell source is dependent on the use of the relative expression level. Using expression found in normal tissues as a mean expression score aids in validating whether the marker assayed

5   is ovarian specific (versus normal cells). In addition, as more data is accumulated, the mean expression value can be revised, providing improved relative expression values based on accumulated data. Expression data from ovarian cells provides a means for grading the severity of the ovarian cancer state.

In another embodiment of the present invention, a polypeptide corresponding to

10   a marker is detected. A preferred agent for detecting a polypeptide of the invention is an antibody capable of binding to a polypeptide corresponding to a marker of the invention, preferably an antibody with a detectable label. Antibodies can be polyclonal, or more preferably, monoclonal. An intact antibody, or a fragment thereof (e.g., Fab or F(ab')$_2$) can be used. The term "labeled", with regard to the probe or antibody, is intended to

15   encompass direct labeling of the probe or antibody by coupling (i.e., physically linking) a detectable substance to the probe or antibody, as well as indirect labeling of the probe or antibody by reactivity with another reagent that is directly labeled. Examples of indirect labeling include detection of a primary antibody using a fluorescently labeled secondary antibody and end-labeling of a DNA probe with biotin such that it can be

20   detected with fluorescently labeled streptavidin.

Proteins from ovarian cells can be isolated using techniques that are well known to those of skill in the art. The protein isolation methods employed can, for example, be such as those described in Harlow and Lane (Harlow and Lane, 1988, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New

25   York).

A variety of formats can be employed to determine whether a sample contains a protein that binds to a given antibody. Examples of such formats include, but are not limited to, enzyme immunoassay (EIA), radioimmunoassay (RIA), Western blot analysis and enzyme linked immunoabsorbant assay (ELISA). A skilled artisan can

30   readily adapt known protein/antibody detection methods for use in determining whether ovarian cells express a marker of the present invention.

In one format, antibodies, or antibody fragments, can be used in methods such as Western blots or immunofluorescence techniques to detect the expressed proteins. In such uses, it is generally preferable to immobilize either the antibody or proteins on a solid support. Suitable solid phase supports or carriers include any support capable of

5　binding an antigen or an antibody. Well-known supports or carriers include glass, polystyrene, polypropylene, polyethylene, dextran, nylon, amylases, natural and modified celluloses, polyacrylamides, gabbros, and magnetite.

One skilled in the art will know many other suitable carriers for binding antibody or antigen, and will be able to adapt such support for use with the present invention. For

10　example, protein isolated from ovarian cells can be run on a polyacrylamide gel electrophoresis and immobilized onto a solid phase support such as nitrocellulose. The support can then be washed with suitable buffers followed by treatment with the detectably labeled antibody. The solid phase support can then be washed with the buffer a second time to remove unbound antibody. The amount of bound label on the solid

15　support can then be detected by conventional means.

The invention also encompasses kits for detecting the presence of a polypeptide or nucleic acid corresponding to a marker of the invention in a biological sample (e.g. an ovary-associated body fluid such as a urine sample). Such kits can be used to determine if a subject is suffering from or is at increased risk of developing ovarian cancer. For

20　example, the kit can comprise a labeled compound or agent capable of detecting a polypeptide or an mRNA encoding a polypeptide corresponding to a marker of the invention in a biological sample and means for determining the amount of the polypeptide or mRNA in the sample (e.g., an antibody which binds the polypeptide or an oligonucleotide probe which binds to DNA or mRNA encoding the polypeptide). Kits

25　can also include instructions for interpreting the results obtained using the kit.

For antibody-based kits, the kit can comprise, for example: (1) a first antibody (e.g., attached to a solid support) which binds to a polypeptide corresponding to a marker of the invention; and, optionally, (2) a second, different antibody which binds to either the polypeptide or the first antibody and is conjugated to a detectable label.

30　For oligonucleotide-based kits, the kit can comprise, for example: (1) an oligonucleotide, e.g., a detectably labeled oligonucleotide, which hybridizes to a nucleic acid sequence encoding a polypeptide corresponding to a marker of the invention or (2)

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a pair of primers useful for amplifying a nucleic acid molecule corresponding to a
marker of the invention. The kit can also comprise, *e.g.*, a buffering agent, a
preservative, or a protein stabilizing agent. The kit can further comprise components
necessary for detecting the detectable label (*e.g.*, an enzyme or a substrate). The kit can
5   also contain a control sample or a series of control samples which can be assayed and
compared to the test sample. Each component of the kit can be enclosed within an
individual container and all of the various containers can be within a single package,
along with instructions for interpreting the results of the assays performed using the kit.

10   B. Pharmacogenomics
        Agents or modulators which have a stimulatory or inhibitory effect on expression
of a marker of the invention can be administered to individuals to treat (prophylactically
or therapeutically) ovarian cancer in the patient. In conjunction with such treatment, the
pharmacogenomics (*i.e.*, the study of the relationship between an individual's genotype
15   and that individual's response to a foreign compound or drug) of the individual may be
considered. Differences in metabolism of therapeutics can lead to severe toxicity or
therapeutic failure by altering the relation between dose and blood concentration of the
pharmacologically active drug. Thus, the pharmacogenomics of the individual permits
the selection of effective agents (*e.g.*, drugs) for prophylactic or therapeutic treatments   .
20   based on a consideration of the individual's genotype. Such pharmacogenomics can.
further be used to determine appropriate dosages and therapeutic regimens.
Accordingly, the level of expression of a marker of the invention in an individual can be
determined to thereby select appropriate agent(s) for therapeutic or prophylactic
treatment of the individual.
25   .   Pharmacogenomics deals with clinically significant variations in the response to
drugs due to altered drug disposition and abnormal action in affected persons. See, *e.g.*,
Linder (1997) *Clin. Chem.* 43(2):254-266. In general, two types of pharmacogenetic
conditions can be differentiated. Genetic conditions transmitted as a single factor
altering the way drugs act on the body are referred to as "altered drug action." Genetic
30   conditions transmitted as single factors altering the way the body acts on drugs are
referred to as "altered drug metabolism". These pharmacogenetic conditions can occur
either as rare defects or as polymorphisms. For example, glucose-6-phosphate

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dehydrogenase (G6PD) deficiency is a common inherited enzymopathy in which the main clinical complication is hemolysis after ingestion of oxidant drugs (anti-malarials, sulfonamides, analgesics, nitrofurans) and consumption of fava beans.

As an illustrative embodiment, the activity of drug metabolizing enzymes is a major determinant of both the intensity and duration of drug action. The discovery of genetic polymorphisms of drug metabolizing enzymes (e.g., N-acetyltransferase 2 (NAT 2) and cytochrome P450 enzymes CYP2D6 and CYP2C19) has provided an explanation as to why some patients do not obtain the expected drug effects or show exaggerated drug response and serious toxicity after taking the standard and safe dose of a drug. These polymorphisms are expressed in two phenotypes in the population, the extensive metabolizer (EM) and poor metabolizer (PM). The prevalence of PM is different among different populations. For example, the gene coding for CYP2D6 is highly polymorphic and several mutations have been identified in PM, which all lead to the absence of functional CYP2D6. Poor metabolizers of CYP2D6 and CYP2C19 quite frequently experience exaggerated drug response and side effects when they receive standard doses. If a metabolite is the active therapeutic moiety, a PM will show no therapeutic response, as demonstrated for the analgesic effect of codeine mediated by its CYP2D6-formed metabolite morphine. The other extreme are the so called ultra-rapid metabolizers who do not respond to standard doses. Recently, the molecular basis of ultra-rapid metabolism has been identified to be due to CYP2D6 gene amplification.

Thus, the level of expression of a marker of the invention in an individual can be determined to thereby select appropriate agent(s) for therapeutic or prophylactic treatment of the individual. In addition, pharmacogenetic studies can be used to apply genotyping of polymorphic alleles encoding drug-metabolizing enzymes to the identification of an individual's drug responsiveness phenotype. This knowledge, when applied to dosing or drug selection, can avoid adverse reactions or therapeutic failure and thus enhance therapeutic or prophylactic efficiency when treating a subject with a modulator of expression of a marker of the invention.

C. Monitoring Clinical Trials

Monitoring the influence of agents (e.g., drug compounds) on the level of expression of a marker of the invention can be applied not only in basic drug screening,

but also in clinical trials. For example, the effectiveness of an agent to affect marker
expression can be monitored in clinical trials of subjects receiving treatment for ovarian
cancer. In a preferred embodiment, the present invention provides a method for
monitoring the effectiveness of treatment of a subject with an agent (*e.g.*, an agonist,

5   antagonist, peptidomimetic, protein, peptide, nucleic acid, small molecule, or other drug
candidate) comprising the steps of (i) obtaining a pre-administration sample from a
subject prior to administration of the agent; (ii) detecting the level of expression of one
or more selected markers of the invention in the pre-administration sample; (iii)
obtaining one or more post-administration samples from the subject; (iv) detecting the

10   level of expression of the marker(s) in the post-administration samples; (v) comparing
the level of expression of the marker(s) in the pre-administration sample with the level
of expression of the marker(s) in the post-administration sample or samples; and (vi)
altering the administration of the agent to the subject accordingly. For example,
increased administration of the agent can be desirable to increase expression of the

15   marker(s) to higher levels than detected, *i.e.*, to increase the effectiveness of the agent.
Alternatively, decreased administration of the agent can be desirable to decrease
expression of the marker(s) to lower levels than detected, *i.e.*, to decrease the
effectiveness of the agent.

20   D. Electronic Apparatus Readable Media and Arrays
          Electronic apparatus readable media comprising a marker of the present
invention is also provided. As used herein, "electronic apparatus readable media" refers
to any suitable medium for storing, holding or containing data or information that can be
read and accessed directly by an electronic apparatus. Such media can include, but are

25   not limited to: magnetic storage media, such as floppy discs, hard disc storage medium,
and magnetic tape; optical storage media such as compact disc; electronic storage media
such as RAM, ROM, EPROM, EEPROM and the like; general hard disks and hybrids of
these categories such as magnetic/optical storage media. The medium is adapted or
configured for having recorded thereon a marker of the present invention.

30   As used herein, the term "electronic apparatus" is intended to include any
suitable computing or processing apparatus or other device configured or adapted for
storing data or information. Examples of electronic apparatus suitable for use with the

present invention include stand-alone computing apparatus; networks, including a local area network (LAN), a wide area network (WAN) Internet, Intranet, and Extranet; electronic appliances such as a personal digital assistants (PDAs), cellular phone, pager and the like; and local and distributed processing systems.

5   As used herein, "recorded" refers to a process for storing or encoding information on the electronic apparatus readable medium. Those skilled in the art can readily adopt any of the presently known methods for recording information on known media to generate manufactures comprising the markers of the present invention.

A variety of software programs and formats can be used to store the marker

10   information of the present invention on the electronic apparatus readable medium. For example, the nucleic acid sequence corresponding to the markers can be represented in a word processing text file, formatted in commercially-available software such as WordPerfect and MicroSoft Word, or represented in the form of an ASCII file, stored in a database application, such as DB2, Sybase, Oracle, or the like, as well as in other

15   forms. Any number of dataprocessor structuring formats (e.g., text file or database) may be employed in order to obtain or create a medium having recorded thereon the the markers of the present invention.

By providing the markers of the invention in readable form, one can routinely access the marker sequence information for a variety of purposes. For example, one

20   skilled in the art can use the nucleotide or amino acid sequences of the present invention in readable form to compare a target sequence or target structural motif with the sequence information stored within the data storage means. Search means are used to identify fragments or regions of the sequences of the invention which match a particular target sequence or target motif.

25   The present invention therefore provides a medium for holding instructions for performing a method for determining whether a subject has ovarian cancer or a pre-disposition to ovarian cancer, wherein the method comprises the steps of determining the presence or absence of a marker and based on the presence or absence of the marker, determining whether the subject has ovarian cancer or a pre-disposition to ovarian

30   cancer and/or recommending a particular treatment for ovarian cancer or pre-ovarian cancer condition.

The present invention further provides in an electronic system and/or in a network, a method for determining whether a subject has ovarian cancer or a pre-disposition to ovarian cancer associated with a marker wherein the method comprises the steps of determining the presence or absence of the marker, and based on the

5   presence or absence of the marker, determining whether the subject has ovarian cancer or a pre-disposition to ovarian cancer, and/or recommending a particular treatment for the ovarian cancer or pre-ovarian cancer condition. The method may further comprise the step of receiving phenotypic information associated with the subject and/or acquiring from a network phenotypic information associated with the subject.

10   The present invention also provides in a network, a method for determining whether a subject has ovarian cancer or a pre-disposition to ovarian cancer associated with a marker, said method comprising the steps of receiving information associated with the marker receiving phenotypic information associated with the subject, acquiring information from the network corresponding to the marker and/or ovarian cancer, and

15   based on one or more of the phenotypic information, the marker, and the acquired information, determining whether the subject has a ovarian cancer or a pre-disposition to ovarian cancer. The method may further comprise the step of recommending a particular treatment for the ovarian cancer or pre-ovarian cancer condition.

The present invention also provides a business method for determining whether a

20   subject has ovarian cancer or a pre-disposition to ovarian cancer, said method comprising the steps of receiving information associated with the marker, receiving phenotypic information associated with the subject, acquiring information from the network corresponding to the marker and/or ovarian cancer, and based on one or more of the phenotypic information, the marker, and the acquired information, determining

25   whether the subject has ovarian cancer or a pre-disposition to ovarian cancer. The method may further comprise the step of recommending a particular treatment for the ovarian cancer or pre-ovarian cancer condition.

The invention also includes an array comprising a marker of the present invention. The array can be used to assay expression of one or more genes in the array.

30   In one embodiment, the array can be used to assay gene expression in a tissue to ascertain tissue specificity of genes in the array. In this manner, up to about 7600 genes

can be simultaneously assayed for expression. This allows a profile to be developed
showing a battery of genes specifically expressed in one or more tissues.

In addition to such qualitative determination, the invention allows the
quantitation of gene expression. Thus, not only tissue specificity, but also the level of
5   expression of a battery of genes in the tissue is ascertainable. Thus, genes can be
grouped on the basis of their tissue expression *per se* and level of expression in that
tissue. This is useful, for example, in ascertaining the relationship of gene expression
between or among tissues. Thus, one tissue can be perturbed and the effect on gene
expression in a second tissue can be determined. In this context, the effect of one cell
10   type on another cell type in response to a biological stimulus can be determined. Such a
determination is useful, for example, to know the effect of cell-cell interaction at the
level of gene expression. If an agent is administered therapeutically to treat one cell
type but has an undesirable effect on another cell type, the invention provides an assay
to determine the molecular basis of the undesirable effect and thus provides the
15   opportunity to co-administer a counteracting agent or otherwise treat the undesired
effect. Similarly, even within a single cell type, undesirable biological effects can be
determined at the molecular level. Thus, the effects of an agent on expression of other
than the target gene can be ascertained and counteracted.

In another embodiment, the array can be used to monitor the time course of
20   expression of one or more genes in the array. This can occur in various biological
contexts, as disclosed herein, for example development of ovarian cancer, progression of
ovarian cancer, and processes, such a cellular transformation associated with ovarian
cancer.

The array is also useful for ascertaining the effect of the expression of a gene on
25   the expression of other genes in the same cell or in different cells. This provides, for
example, for a selection of alternate molecular targets for therapeutic intervention if the
ultimate or downstream target cannot be regulated.

The array is also useful for ascertaining differential expression patterns of one or
more genes in normal and abnormal cells. This provides a battery of genes that could
30   serve as a molecular target for diagnosis or therapeutic intervention.

E. Surrogate Markers

The markers of the invention may serve as surrogate markers for one or more
disorders or disease states or for conditions leading up to disease states, and in
particular, ovarian cancer. As used herein, a "surrogate marker" is an objective

5   biochemical marker which correlates with the absence or presence of a disease or
disorder, or with the progression of a disease or disorder (*e.g.*, with the presence or
absence of a tumor). The presence or quantity of such markers is independent of the
disease. Therefore, these markers may serve to indicate whether a particular course of
treatment is effective in lessening a disease state or disorder. Surrogate markers are of

10   particular use when the presence or extent of a disease state or disorder is difficult to
assess through standard methodologies (*e.g.*, early stage tumors), or when an assessment
of disease progression is desired before a potentially dangerous clinical endpoint is
reached (*e.g.*, an assessment of cardiovascular disease may be made using cholesterol
levels as a surrogate marker, and an analysis of HIV infection may be made using HIV

15   RNA levels as a surrogate marker, well in advance of the undesirable clinical outcomes
of myocardial infarction or fully-developed AIDS). Examples of the use of surrogate
markers in the art include: Koomen *et al.* (2000) *J. Mass. Spectrom.* 35: 258-264; and
James (1994) *AIDS Treatment News Archive* 209.

The markers of the invention are also useful as pharmacodynamic markers. As

20   used herein, a "pharmacodynamic marker" is an objective biochemical marker which
correlates specifically with drug effects. The presence or quantity of a
pharmacodynamic marker is not related to the disease state or disorder for which the
drug is being administered; therefore, the presence or quantity of the marker is
indicative of the presence or activity of the drug in a subject. For example, a

25   pharmacodynamic marker may be indicative of the concentration of the drug in a
biological tissue, in that the marker is either expressed or transcribed or not expressed or
transcribed in that tissue in relationship to the level of the drug. In this fashion, the
distribution or uptake of the drug may be monitored by the pharmacodynamic marker.
Similarly, the presence or quantity of the pharmacodynamic marker may be related to

30   the presence or quantity of the metabolic product of a drug, such that the presence or
quantity of the marker is indicative of the relative breakdown rate of the drug *in vivo*.
Pharmacodynamic markers are of particular use in increasing the sensitivity of detection

of drug effects, particularly when the drug is administered in low doses. Since even a small amount of a drug may be sufficient to activate multiple rounds of marker transcription or expression, the amplified marker may be in a quantity which is more readily detectable than the drug itself. Also, the marker may be more easily detected

5   due to the nature of the marker itself; for example, using the methods described herein, antibodies may be employed in an immune-based detection system for a protein marker, or marker-specific radiolabeled probes may be used to detect a mRNA marker. Furthermore, the use of a pharmacodynamic marker may offer mechanism-based prediction of risk due to drug treatment beyond the range of possible direct

10   observations. Examples of the use of pharmacodynamic markers in the art include: Matsuda *et al.* US 6,033,862; Hattis *et al.* (1991) *Env. Health Perspect.* 90: 229-238; Schentag (1999) *Am. J. Health-Syst. Pharm.* 56 Suppl. 3: S21-S24; and Nicolau (1999) *Am, J. Health-Syst. Pharm.* 56 Suppl. 3: S16-S20.

        The markers of the invention are also useful as pharmacogenomic markers. As
15   used herein, a "pharmacogenomic marker" is an objective biochemical marker which correlates with a specific clinical drug response or susceptibility in a subject (see, e.g., McLeod *et al.* (1999) *Eur. J. Cancer* 35(12): 1650-1652). The presence or quantity of the pharmacogenomic marker is related to the predicted response of the subject to a specific drug or class of drugs prior to administration of the drug. By assessing the

20   presence or quantity of one or more pharmacogenomic markers in a subject, a drug therapy which is most appropriate for the subject, or which is predicted to have a greater degree of success, may be selected. For example, based on the presence or quantity of RNA or protein for specific tumor markers in a subject, a drug or course of treatment may be selected that is optimized for the treatment of the specific tumor likely to be

25   present in the subject. Similarly, the presence or absence of a specific sequence mutation in marker DNA may correlate with drug response. The use of pharmacogenomic markers therefore permits the application of the most appropriate treatment for each subject without having to administer the therapy.

VI. Experimental Protocol

A. Subtracted Libraries

Subtracted libraries are generated using a PCR based method that allows the isolation of clones expressed at higher levels in one population of mRNA (tester) compared to another population (driver). Both tester and driver mRNA populations are converted into cDNA by reverse transcription, and then PCR amplified using the SMART PCR kit from Clontech. Tester and driver cDNAs are then hybridized using the PCR-Select cDNA subtraction kit from Clontech. This technique results in both subtraction and normalization, which is an equalization of copy number of low-abundance and high-abundance sequences. After generation of the subtractive libraries, a group of 96 or more clones from each library is tested to confirm differential expression by reverse Southern hybridization.

To create the subtracted libraries, a first group of regular cDNA libraries was constructed. Library johOa was constructed from a pool of 5 normal ovarian epithelial cell cultures. Library johOb was constructed from a pool of 5 ascites short cultured samples from ovarian cancer patients. Library johOc was constructed from a pool of 6 serous late stage (III/IV) tumor samples. Three subtracted libraries were generated from tumor samples. Library johOd was a subtracted ascites library, where the tester was johOb, and the driver was johOa. The johOe and the johOf library were both subtracted stage III/IV serous tumor libraries. The tester for both of these libraries was johOc, and the driver was a pooled RNA from normal tissues. The tissues used for this driver pool were: kidney, small intestine, prostate, lung, heart, muscle, spleen, pancreas, liver, and lymphocyte. Library cMhOg was the same as the johOc and johOf libraries, with the exception that normal ovary was added to the driver. cMhOh, i, j, and k are all stage I/II subtracted libraries made from pooled tumor RNAs of different histological types (h=serous, I-endometriod, j=clear cell, k=mucinous). The driver was the same for these 4 libraries. It consisted of normal ovarian epithelial RNA and PBML RNA. Of the markers listed in Table 1, SEQ ID NOS: 1-129, 916-1029, 1566-1571 and 1607-1865 were identified in library johOa. Markers identified in johOb include SEQ ID NOS: 130-177, 1030-1081, 1572-1574, and 1866-1974. Markers identified in johOc include SEQ ID NOS: 178-269, 1082-1120, 1575-1577, and 1975-2060. Markers identified in johOd include SEQ ID NOS: 270-370, 1121-1304, 1578-1592, and 2061-2244. Markers

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identified in johOe include SEQ ID NOS: 371-611, 1305-1416, 1593-1596 and 2245-2487. Markers identified in johOf include SEQ ID NOS: 612-915, 1417-1565, 1597-1606, and 2488-2871. Of the markers listed in Table 1A, SEQ ID NOS: 2872-2976, 3817-3898, 4438-4443 and 4474-4675 were identified in library cMhOg. Markers identified in cMhOh include SEQ ID NOS: 2977-3376, 3899-4072, 4444-4455, and 4676-5303. Markers identified in cMhOi include SEQ ID NOS: 3377-3495, 4073-4158, 4456-4460, and 5304-5637. Markers identified in cMhOj include SEQ ID NOS: 3496-3742, 4195-4390, 4461-4468, and 5638-6197. Markers identified in cMhOk include SEQ ID NOS: 3743-3816, 4391-4437, 4469-4473 and 6198-6398.

VII. Summary Of The Data Provided In The Tables

        Tables 1, 1A, 2 and 3 are being filed concurrently herewith on a compact disc in lieu of paper copies. The compact disc submitted is formatted from an IBM-PC and is compatible with MS-Windows. The disc contains the following four (4) files: Table1.text, containing 1,223kb, Table1A.text, containing 1,582kb, Table2.text, containing 10,600kb, and Table3.text, containing 568kb. The material on the compact disc, namely Tables 1, 1A, 2 and 3, is expressly incorporated by reference.

        Tables 1 and 1A show 6398 novel nucleotide sequences. These 6398 novel sequences were determined to be novel through various BLAST searches of available databases. Of these novel markers, SEQ ID NOS: 1566 – 1606 and 4438-4473 are preferred, SEQ ID NOS: 916-1565 and 3817-4437 are more preferred, and SEQ ID NOS: 1 – 915 and 2872-3816 are most preferred.

        The sequences of Tables 1 and 1A were re-interpreted and vector sequences removed and those sequences are set forth in Table 2.

        Table 3 correlates the SEQ ID NOS. from Tables 1 and 1A with those of Table 2.

        The contents of all references, patents, published patent applications, and databases cited throughout this application are hereby incorporated by reference.

Other Embodiments

        Those skilled in the art will recognize, or be able to ascertain using no more than routine experimentation, many equivalents to the specific embodiments of the invention

described herein. Such equivalents are intended to be encompassed by the following claims.

What is claimed is:

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Claims

1.   An isolated nucleic acid molecule comprising a nucleotide sequence of Tables 1-2, or a complement thereof.

2.   A vector which contains the nucleic acid molecule of claim 1.

3.   A host cell which contains the nucleic acid molecule of claim 1.

4.   An isolated polypeptide which is encoded by a nucleic acid molecule comprising a nucleotide sequence of Tables 1-2.

5.   An antibody which selectively binds to a polypeptide of claim 4.

6.   A method for producing a polypeptide comprising culturing the host cell of claim 3 under conditions in which the nucleic acid molecule is expressed.

7.   A method for detecting the presence of a polypeptide of claim 4 in a sample comprising:

        a)   contacting the sample with a compound which selectively binds to the polypeptide; and

        b)   determining whether the compound binds to the polypeptide in the sample to thereby detect the presence of a polypeptide of claim 4 in the sample.

8.   A kit comprising a compound which selectively binds to the polypeptide of claim 4.

9.   A method for detecting the presence of a nucleic acid molecule of claim 1 in a sample comprising:

a)   contacting the sample with a nucleic acid probe or primer which selectively hybridizes to the nucleic acid molecule; and

b)   determining whether the nucleic acid probe or primer binds to a nucleic acid molecule in the sample to thereby detect the presence of a nucleic acid molecule of claim 1 in the sample.

10.   The method of claim 9, wherein the sample comprises mRNA molecules and is contacted with a nucleic acid probe.

11.   The method of claim 9, wherein the sample is isolated from ovarian tissue.

12.   The method of claim 9, wherein the sample is a tumor sample.

13.   A kit comprising a compound which selectively hybridizes to a nucleic acid molecule of claim 1.

14.   A method of assessing whether a patient is afflicted with ovarian cancer, the method comprising comparing:

a)   the level of expression of a marker in a patient sample, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2, and

b)   the normal level of expression of the marker in a control non-ovarian cancer sample,

wherein a significant difference between the level of expression of the marker in the patient sample and the normal level is an indication that the patient is afflicted with ovarian cancer.

15.   The method of claim 14, wherein the marker corresponds to a secreted protein.

16.   The method of claim 14, wherein the marker corresponds to a transcribed polynucleotide or portion thereof, wherein the polynucleotide comprises the marker.

17.   The method of claim 14, wherein the sample comprises cells obtained from the patient.

18.   The method of claim 17, wherein the sample is an ovarian tissue sample.

19.   The method of claim 14, wherein the sample is an ovary-associated body fluid.

20.   The method of claim 14, wherein the level of expression of the marker in the sample is assessed by detecting the presence in the sample of a protein or protein fragment corresponding to the marker.

21.   The method of claim 20, wherein the presence of the protein or protein fragment is detected using a reagent which specifically binds with the protein or protein fragment.

22.   The method of claim 21, wherein the reagent is selected from the group consisting of an antibody, an antibody derivative, and an antibody fragment.

23.   The method of claim 14, wherein the level of expression of the marker in the sample is assessed by detecting the presence in the sample of a transcribed polynucleotide or portion thereof, wherein the transcribed polynucleotide comprises the marker.

24.   The method of claim 23, wherein the transcribed polynucleotide is an mRNA.

25.   The method of claim 23, wherein the transcribed polynucleotide is a cDNA.

26.   The method of claim 23, wherein the step of detecting further comprises amplifying the transcribed polynucleotide.

27.   The method of claim 14, wherein the level of expression of the marker in the sample is assessed by detecting the presence in the sample of a transcribed polynucleotide which anneals with the marker or anneals with a portion of a polynucleotide wherein the polynucleotide comprises the marker, under stringent hybridization conditions.

28.   The method of claim 14, wherein the level of expression of the marker in the sample differs from the normal level of expression of the marker in a patient not afflicted with ovarian cancer by a factor of at least about 2.

29.   The method of claim 14, wherein the level of expression of the marker in the sample differs from the normal level of expression of the marker in a patient not afflicted with ovarian cancer by a factor of at least about 5.

30.   The method of claim 14, comprising comparing:
        a)   the level of expression in the sample of each of a plurality of markers independently selected from the markers listed in Tables 1-2, and
        b)   the normal level of expression of each of the plurality of markers in samples of the same type obtained from control humans not afflicted with ovarian cancer,
wherein the level of expression of more than one of the markers is significantly altered, relative to the corresponding normal levels of expression of the markers, is an indication that the patient is afflicted with ovarian cancer.

31.   The method of claim 30, wherein the level of expression of each of the markers is significantly altered, relative to the corresponding normal levels of expression of the markers, is an indication that the patient is afflicted with ovarian cancer.

32.   The method of claim 30, wherein the plurality comprises at least three of the markers.

33.   The method of claim 30, wherein the plurality comprises at least five of the markers.

34.   A method for monitoring the progression of ovarian cancer in a patient, the method comprising:

     a)   detecting in a patient sample at a first point in time, the expression of a marker, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2;

     b)   repeating step a) at a subsequent point in time; and

     c)   comparing the level of expression detected in steps a) and b), and therefrom monitoring the progression of ovarian cancer.

35.   The method of claim 34, wherein the marker corresponds to a secreted protein.

36.   The method of claim 34, wherein the marker corresponds to a transcribed polynucleotide or portion thereof, wherein the polynucleotide comprises the marker.

37.   The method of claim 34, wherein the sample comprises cells obtained from the patient.

38.   The method of claim 37, wherein the patient sample is an ovarian tissue sample.

39.   The method of claim 34, wherein between the first point in time and the subsequent point in time, the patient has undergone surgery to remove ovarian tissue.

40.   A method of assessing the efficacy of a test compound for inhibiting ovarian cancer in a patient, the method comprising comparing:

a)   expression of a marker in a first sample obtained from the patient and exposed to the test compound, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2, and

b)   expression of the marker in a second sample obtained from the patient, wherein the sample is not exposed to the test compound,

wherein a significantly lower level of expression of the marker in the first sample, relative to the second sample, is an indication that the test compound is efficacious for inhibiting ovarian cancer in the patient.

41.   The method of claim 40, wherein the first and second samples are portions of a single sample obtained from the patient.

42.   The method of claim 40, wherein the first and second samples are portions of pooled samples obtained from the patient.

43.   A method of assessing the efficacy of a therapy for inhibiting ovarian cancer in a patient, the method comprising comparing:

a)   expression of a marker in the first sample obtained from the patient prior to providing at least a portion of the therapy to the patient, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2, and

b)   expression of the marker in a second sample obtained from the patient following provision of the portion of the therapy,

wherein a significantly lower level of expression of the marker in the second sample, relative to the first sample, is an indication that the therapy is efficacious for inhibiting ovarian cancer in the patient.

44.   A method of selecting a composition for inhibiting ovarian cancer in a patient, the method comprising:

a)   obtaining a sample comprising cancer cells from the patient;

b)   separately exposing aliquots of the sample in the presence of a plurality of test compositions;

c)   comparing expression of a marker in each of the aliquots, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2; and

d)   selecting one of the test compositions which alters the level of expression of the marker in the aliquot containing that test composition, relative to other test compositions.

45.   A method of inhibiting ovarian cancer in a patient, the method comprising:

a)   obtaining a sample comprising cancer cells from the patient;

b)   separately maintaining aliquots of the sample in the presence of a plurality of test compositions;

c)   comparing expression of a marker in each of the aliquots, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2; and

d)   administering to the patient at least one of the test compositions which alters the level of expression of the marker in the aliquot containing that test composition, relative to other test compositions.

46.   A kit for assessing whether a patient is afflicted with ovarian cancer, the kit comprising reagents for assessing expression of a marker selected from the group consisting of the markers listed in Tables 1-2.

47.   A kit for assessing the presence of ovarian cancer cells, the kit comprising a nucleic acid probe wherein the probe specifically binds with a transcribed polynucleotide corresponding to a marker selected from the group consisting of the markers listed in Tables 1-2.

48.   A kit for assessing the suitability of each of a plurality of compounds for inhibiting ovarian cancer in a patient, the kit comprising:

a)   the plurality of compounds; and

b)   a reagent for assessing expression of a marker selected from the group consisting of the markers listed in Tables 1-2.

49.   A method of making an isolated hybridoma which produces an antibody useful for assessing whether a patient is afflicted with ovarian cancer, the method comprising:

isolating a protein or protein fragment corresponding to a marker selected from the group consisting of the markers listed in Tables 1-2;

immunizing a mammal using the isolated protein or protein fragment;

isolating splenocytes from the immunized mammal;

fusing the isolated splenocytes with an immortalized cell line to form hybridomas; and

screening individual hybridomas for production of an antibody which specifically binds with the protein or protein fragment to isolate the hybridoma.

50.   An antibody produced by a hybridoma made by the method of claim 42.

51.   A kit for assessing the presence of human ovarian cancer cells, the kit comprising an antibody, wherein the antibody specifically binds with a protein or protein fragment corresponding to a marker selected from the group consisting of the markers listed in Tables 1-2.

52.   A method of assessing the ovarian cell carcinogenic potential of a test compound, the method comprising:

a)   maintaining separate aliquots of ovarian cells in the presence and absence of the test compound; and

b)   comparing expression of a marker in each of the aliquots, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2,

wherein a significantly altered level of expression of the marker in the aliquot maintained in the presence of the test compound, relative to the aliquot maintained in the absence of the test compound, is an indication that the test compound possesses human ovarian cell carcinogenic potential.

53. A kit for assessing the ovarian cell carcinogenic potential of a test compound, the kit comprising ovarian cells and a reagent for assessing expression of a marker, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2.

54. A method of inhibiting ovarian cancer in a patient at risk for developing ovarian cancer, the method comprising inhibiting expression of a gene corresponding to a marker selected from the markers listed in Tables 1-2.

55. A method of treating a patient afflicted with ovarian cancer, the method comprising providing to cells of the patient an antisense oligonucleotide complementary to a polynucleotide corresponding to a marker selected from the markers listed in Tables 1-2.

56. A method of inhibiting ovarian cancer in a patient at risk for developing ovarian cancer, the method comprising decreasing expression of a gene corresponding to a marker selected from the markers listed in Tables 1-2.

57. A method for determining whether ovarian cancer has metastasized in a patient, the method comprising comparing:

a) the level of expression of a marker in a patient smaple, wherein the marker is selected from the group consisting of the markers listed in Tables 1-2, and

b) the normal level or non-metastatic level of expression of the marker in a control sample

wherein a significant difference betweent he level of expression in the patient sample and the normal level or non-metastatic level is an indication that the ovarian cancer has mestastasized.

5   58.   The method of claim 57, wherein the marker corresponds to a secreted protein.

59.   The method of claim 57, wherein the marker corresponds to a transcribed polynucleotide or portion thereof, wherein the polynucleotide comprises the marker.
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60.   The method of claim 57, wherein the sample comprises cells obtained from the patient.

61.   The method of claim 60, wherein the patient sample is an ovarian tissue
15   sample.

62.   A method for assessing the aggressiveness or indolence of ovarian cancer comprising comparing:
        a)   the level of expression of a marker in a sample, wherein at least
20   one marker is selected from the markers of Tables 1-2, and
        b)   the normal level of expression of the marker in a control sample, wherein a significant difference between the level of expression in the sample and the normal level is an indication that the cancer is aggressive or indolent.

25   63.   The method of claim 62, wherein the marker corresponds to a secreted protein.

64.   The method of claim 62, wherein marker corresponds to a transcribed polynucleotide or portion thereof, wherein the polynucleotide comprises the marker.
30

65.   The method of claim 62, wherein the sample comprises cells obtained from the patient.

66.   The method of claim 65, wherein the patient sample is an ovarian tissue sample.

TABLE 1
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Sequence 1
ACGCGTCCGGGAGACACAAAGCAGGAAGCCTCCGGGAGACCAGAGCTGGGTGCAGACATA
CACACACACATACACACAGACACACAGAGTCACACACACTCACACACACTCTCTCTCTCT
CTCCCTCTGTCTTTCTCTCTCTCTCTCTCTCTGTCCTTTCCTCCTGGACAGATCCACA
GTTATACACAGAAACAAACACACACGCACGTAGAGAAGTGATTCACAAACACTTAAAGAC
ATAAATCACAGGTGCAAAGCCATACCTGGGCTCAAAAACCTCCAAGAGAACGCAGCCTCA
GACCCACCCAGGGGCCAGGGGCCAGGCTGTTTGCGAGACCAGCCCAGGCGGGACCCAGGC
TTGCACGGGCAGGTACACGACATTCTTGGGCATACGCAGCCCGCCTGGCCGGAGCTGTGG
GAGTCCTCAGCCCCAAGACCCAGCAGGCGTCTGAGGCCTGCCCACTAAGGAGGAGGAGTC
ATTGCTGCCATCATTTATCATNCCCTCCCCAGCCACAGTCTGAGGAGCCCNTGTNCACCC
TTCCCA
Sequence 2
CGTCCGGAAAGCTGGTGGGAATGCTAAGTTCCGAGAGTTCCTGGAGTCTCAGGAGGATTA
CGATCCTTGCTGGTCCTTGCAGGAGAAGTACAACAGCAGAGCCGCGGCCCTCTTTAGGGA
TAAGGTGGTCGCTCTGGCCGAAGGCAGAGAGTGGTCTTTGGAGTCATCACCTGCCCAGAA
CTGGACCCTACCTNAGCCCANGACGCTGCCGTCCATGGTGCACCGAGTCTCTGGCCAGCC
GCAGAGTGTGACCGCCTCCTNGGACAAGGCTTTTGAAGACTGGCTGAATGATGACCTCGG
CTCCTATCAAGGGGCCCAGGGGAATCGCTACGTGGGGTTTGGGAACACGCCACCGCCTCA
NAAGAAAGAAGATGACTTTCTCAACAACGCCATGTCCTCCCTGTACTCGGGCTGGA
Sequence 3
NCCACGCGTCCGGGACGCGGGCGCCAGGTGCACAGCCCCAGTCCGCTGCGGGCGGGCGTC
GACATCTGCCGCGTGAGCGCGAGCTGGAGCTACACCGCTTTCGTGACCCGTGGAGGCCGC
TTGGAGCTGTCGGGCTCAGCCAGCGGCGCGGCGGGCCGCTGCAAGGACGCGTGGGCCTCG
GAGGGGCTCCTCGCGGTGCTGCGCGCCGGGCCGGGGCCGGAGGCGTTACTGCAGGTCTGG
GCGGCCGAATCGGCGCTGCGTGGGGAGCCATTGTGGGCCCAGAATGGTGGTGCCCGAGGC
CGAAGGGGGAAGGACGATCCGGCCGGGTGAAGGCCCAAGCTTGGGGAGGCTACCCCTTGC
TTGCCCTGCGGCCCCGTGCCCCTACGTGAGCCCCGCGGGCCGCCCTTCTACCGGCCTTT
TGGCTTCCGGGAGCTTGCGGGGCAACGCCAACTTGGGAGCTGGGGCCGCCAGCAACCCCG
TTGCTTGTTGGACGCTGTGCCCAAAGGTGGTTTCTGGGGGGCGGGG
Sequence 4
AGTCNCCACGCGTCCGGGAATTGANGCCGCGGGGCGGGCGGCGGCGGCGGCTGGGCGGCG
GCCGGGACCCAGCGGGCCAGGTGGGGACGGCGCGGAGCGGGTGCGGGAGATGCCGTGCGG
GACTGGGGCCACCTGAGCCGCCCGCCTCGTCCCCGCCTTCTGTGGGAAGGATGTGCGCGC
GGATGGCCGGTCGCACAACAGCGGCCCCTCGGGGGCCCTACGGCCCCTGGCTCTGCCTCC
TGGTGGCCCTCGCCCTGGGACCGTCGTGAGAGTGGACTGTGGCCAGGCTCCCCTGGACCC
TGTCTACCTGCCGGCAGCCCTGGAGCTCCTAGACGCCCCTGAACACT
Sequence 5
TCNCCACGCGTCCGACTGTATGTATTCTGGATACAGGGGATACTGGGCTCGCTATGTGTG
TGGAGCCATCCCTTCCTTGCCCCAGCCCCACCTCCCTCTCAAACCCTCTCTGGCTCTTTC
TGAGCTTCCTTTCCTGCTCCCCAGCTTGCCCAGTGCTCAGTGCCCCACTTGGCTCTTTTG
CTACTTCGGGTCAGGTGGAGCCTCTTGGGAATGTGAAGTGCCTTACAGAAAGATTGCACT
TCAAGAGGAGAGGCTGCAGGGAGCCATCCTAAACCCAGAGGCCTGGAGCTTACCCGTGTC
ACTTTACTTTTGTACACAAGGGGGTCTCCTTAGTGCCCTCGAGAAGGGATTCTTGGGCCC
TGAGCTTCTACTCCTGAGGCCACCTTCTGTGCAAGCCCCAAGCTCCCTCAACTCTAGGCT
TGGAGTCCTCAGTGGGGAAAAGCCCTGNTTTGGGG
Sequence 6
CGTCCGCGTCCTCGCTGCGGAAAGTTGGGGCAACCTGTTGCTAGTCTGGTCGTTGGTGAC
AGCGAGGCTTCCGCGCTCGCTGCTGGTGAGCAGCCCCGGCGTGCCCCGCGGGCTGGAAGA
GGCGGCGGCGTGATGCGGCCCGTGGACGCGCCCCGCGCCGGCCCGCGAGAACCTGGCCTC
CCTGGAGCGCGAGCGCGCCCGGGCGCACTGGCGGGCCCGCAGGAAGCTGCTGGAGATCCA

TABLE 1
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GAGCCTGCTCGACGCCATCAAGAGTGAGGTGGAGGCAGAGGAGCGGGGCGCCCGGGCCCC
AGCACCCCGCCCCGCGTGCGGAGGCTGAGGAGNCGGGTGGCTCGGCTGTGCGCCCGAAGC
AGAGAGGAAGGCTGCGGAAGCGGCGCGGATGGGGCAGGCGGGATCGTGGGAGCTGCACNN
ACCGGATCGCCGGCTTGCGAGTGCTGCTGAGCCGGCGAGGCCCNCGGGTCTGGAAGCGGA
ANCGCGCGGG
Sequence 7
NTTCGGGAGTCGACCACGCGTCCGCGCGCTGGAGGAGTGGAGCAAGCACCCGGCCCGGCC
CTGGGGGCTGACAGTCGGCAAAGTTTGGCCCGAAGAGGAAGTGGTCTCAAACCCCGGCAG
GTGGCGACCAGGCCAGACCAGGGGCGCTCGCTGCCTGCGGGCGGGCTGTAGGCGAGGGCG
CGCCCCAGTGCCGAGACCCGGGGCTTCAGGAGCCGGCCCCGGGAGAGAAGAGTGCGGCGG
CGGACGGAGAAAACAACTCCAAAGTTGGCGAAAGGCACCGCCCCTACTCCCGGGCTTGCC
GCCGCCTCCCCGCCCCCAGCCCTGGCATCCAGAGTACGGGTCGAGCCCGGGCCATGGAGC
CCCCCTGGGGAAGGCGGCACCAGGGGAGCCTTGGGCGCCCNGGGCTTCGGCCGCGACCCC
ATTTGGGGTAGACCACAAGAAAGCTTCGGGACCCTTTCGGCACCTTTGGACAGCCAAGAA
TGGCTGNTGGGCACCCTTTCTTCT
Sequence 8
CCCCGCGTCCGGAGCACGCAAAGGGAATAAATTGTAATTAGGTGGTGGGTGGCTAAAAAT
GACAATGCAAAGGTGTTGGATTAAAAAAAAAAATCTGGTAGTAGAGGGAAATTATGGAGGA
TTTTTAAAAAGGTTAATGATAATATCCATCTACTTATGTAACTTTTTTTGGAGATACCTG
ATAATAGTGTAGAGTGCATTGGAGAGGAAAAGTAGGAGTTGTAAAGACCATTTTGGATAA
ACTTTGAAGCAAGGGATAATGGCCTCAACCAAGGTAGTGGTGCTGAAGATTGTTTACATA
AATAAGCAGATACAAATAGAAGGGATTTTTCAAGTGGCATTGTAACTGCACTTTTCAAAG
GTTATTTGCCAAAAATCAAATTAACGGTATCTTCAAAAATCATGTTTGATGGATGTATCA
TCAAGGGCTTTCTTAAAATTTTGTTGAAAGCCAAGGAA
Sequence 9
CGCCTTCCCGGGAAGTTTGGAGGGCCCCGNAGGGGAAGCCCCCGCGNCTTCNGGGGGGCCN
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GTGGGGGGGAACCCCAAGTGCTTTTTTCAAGGCCCCGGCCGGGCCCGGGGCCCCGGAAAGG
GCCTTTCAAGTTCTTNCCTTTCCCCGGNTTGAAAGAAGGNAAAAGGCCGGGAANGGAAAC
CNGGGNAAAACCCGCNGGGGNNGGGGCGGCCTTCNNCCGCCNGGGCGCCCCTTGCCNGGGG
GGGGGNAAAGGGGNCAAAGTTTTCCCNGGGGCCCCCGGGGCCCCGGCNGNCCCTTTNAAN
TCAAGGGGGCCGGGNNCGGNCTTTCCCCAANNCGGCCAAGTTCCTTCAAAGGGGCCCCCC
CGGGNTTTGGGCCCGGNCCGGGNCNGNAACCTTGGGGAAGGAAAAAATTCAAAAAGTTTT
GTTGGCCCGGTTTCCGGGTNGGAATTGCCCCCCNAAAATTTGNAAGCCGGGGGGGGGGGNN
NCCTTGGGGGCCCCTTCTTTGCCCCCNTTTAAAGGGAANGGGCNAAAACCTTTNCCCAAC
CGNCCAANNGCCCCCGTNAAAAAANGGGCCGGCCTTNNTTTTGNCCGGGGCCCCNAANAA
GGGCCTTTTCGNTTTTTTCGGGTTTTTTTCCCCCGGGCCGGGCGGGGCGGNNNCNTTTTTT
TTTTTGGCTTTTAAAGGGGGG
Sequence 10
NCGCGTCCGCCGCATTGTGGCCAAGTGCCATGAGGAGCAGCTGGATCATTCTGTCCAGTC
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GNCTAAAAATGTGACTGGTCTTTTGAAATCAAATGACTCAACAACAGTAAAGCATGTCCT
AAAGCATTCCTGGTTCTTCTTTGCAATTATCCTAAAATCGATGGCACAGCACTTGATTGA
CACAAATAAAATCCAGCTTCCCCGGCCTCAGAGATTTCCTGAATCTTACCAAAATGAATT
GGACAATCTTGNCATGGTCCTATCCGACCATGTGATTTGGGAAATACAAGGATGCACTTG
AAGAAACANGAAGGGCAAACCACAGCGTTGCCAGATTTCTCAAGCGCTGCTTTAC
Sequence 11
CGCCNCGCGTCCGGCTTCCTAGAAGAGCACAGTCCCTTAAAGCACCCTCTATTGCTACAA
TTAAAAGTCTAGCAGATTGTAACTTTAGTTACACAAGTTCTAGAGATGCTTTTGGCTATG
CTACACTGAAAAGACTACAGCAACAAAGAATGCATCCATCCTTATCTCACTCTGAAGCTT

TABLE 1
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TGGCATCTCCAGCAAAAGATGTGCTATTTACTGATACCATCACCATGAAGGCCAACAGTT
TTGAGTCCAGATTAACACCAAGCAGGTTCATGAAAGCCTTAAGTTATGCATCATTAGATA
AAGAAGATTTATTGAGTCCTATTAATCAAAATACCCTGCAACCGATCTTCCTCAGTGCGG
GCCATGGNGTCCAGTGCCACATNGGGGGGGGTCAGAATGATTACATTGGGCTTGCTCTCCC
GGNGGATATAAATGATATATTTCANGGTAAGGGTATTTCTTATTTTTAGACAAAAAACAT
CCCCNCATGATGATCCAGGNGCCAGAGCATTTGCCCTGAATGCAGGAGGGCTTTCATNTG
GNACTGGGNGGGCTTTGNAAAAAATTTTTT
Sequence 12
TTCGGGAGTCGACCACGCGTCCGCCAAGTCCTGCGATGATGGACTCAACACCTTCCGCGA
CGAGGGCCGGGTTCTGCGGCGCCTGCCAAACCGCATACCCAGCCTGCGGATGCTCCGGAG
CTTCTTCACCGACGGGTCCTTGGATAGCTGGGGCACCTCTGAAGATGCTGACGCTCCTTC
TAAGCGACACTCAACCTCTGACCTCTCAGATGCGACCTTCAGCGATATCAGGAGAGAAGG
CTGGTTGTATTATAAGCAGATTCTCACCAAGAAGGGGAAGGCTGAGGACCGGGATGACAT
GCTGGGCTGGATCAGAGCGATCCGGGAGAACAGCAGGGCCGAGGGCGAGGACCCCCGGCT
GTGCCAACCAAGCTCTTGATCAGCAAGAAGCTTAATGATTATCGCAAAGTGAGCCATAGC
TCTGGGCCCAAAGCTTGATTTCTTCCC
Sequence 13
GTATTAATGTTCTCAGGCATGAAGCAGAATTTTACGGGATCACTCCATTAGTAAGAAGGC
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TGCCCCCACCAGGTATTCCTAGTNCGTAAAATAAACAACACAGTCAGATCTGCTGATTCT
AGGAATGGTCTAAATTCTACAGAAGGTGAAGCCCGGGGAAATGGTACACAGCCTGTTCTC
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AAATG
Sequence 14
GCCNCGCGTCCGAAAAAAATTAAGAGAAGGCCTGGCGGCCGGTCTGAAGTCATCTATAATT
ATGTACAACGCCCCTTCATCCAGATGTCATGGGAAAAGGAAGAAGGGAAGAGTCGCCATG
TGGATTTCTAGTGTGTTCGAAGCAAATCCCTCACGAATCTGGTAGCTGCTGGAGATGATG
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GGTAATTAGCTACCATCTTTGCAGCACCCTGGTAACTTGAAAAATTT
Sequence 15
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CCTGCGGCTCCCCCGGCTTTCGGAGCCCGGGGGCGGCCTGTGGCGCGCGGAGCCCGCGCC
GGACTGCGCCTNTTTGGACCTTGAGGGGAAACATGCGTTTGCCNTGGATCGTTTGAAATT
CTGAGTTTGGGATCCCCGNCCGGCCGNCTGGCTTTTTCGCCCGCGGGTTTTTTCCTTTTT
TCCTTTTGCTTTTTTTTTCCTTCTT
Sequence 16
NGCCCCCGCGTCCGTTTTAATTATTTTGTTNGAGCCTGCANAGTAANGTTNTTAAAAATA
TAACGTTCATACGCATTTTAATTAACTTTGAAAGTTCATATGCATCAGAAAATTTATGAA
AATTTGAATGAAAAAAAATTTCATCTATTTATTTTTCTAATTTTAATGGCAAATTTACACT
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TABLE 1
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CCAGCTTTAAGGAGATAGGTGAAGTTATTGTACAAAGTTAAGTGATACCATAAAGTATAT
ATTATAAAGTCATACATGGCTTTTGGACAGTNTTATATTTCAGTTGCAGTGCTGCATTCC
ATTAAATTTCATAAAATGCTAGGGAAAATGTGTTTGATAAAATTTTNTGCAGTGAGAAAT
GACAGACTGAGTGCCTGACAATTTAAGCCACATATGAAAGTATGCAAGTAAAGANTTCAG
GTCCTTAATGTCATCTATATCATGGTATAAAAG
Sequence 17
CCACGCGTCCGGACGAGACGAGCCCACTAGTGTCCCCCGAGCGGGCCCAACCCCCGGACT
ACACCTTCCCGTCGGGCTCGGGCGCTCACTTTCCGCAGGTGCCCGGGGGCGCGGTCCGAG
TGGCTGGCGGCGGCCGGCTCGGGCCCCTNTCCGCCGGGCTCGCCGGGCCACGACCGCTGA
GCGGCAGCCACTGTTGGATCGGGCCCGGGGCGCGGNGGCCCAGGGCCAGACCCAAACCGT
GGCGGCGCAGGCCCAGGCTCTGGCCGTTCANGCCGNGGCGGCAGTCCACGCCGATCAGGC
CCACCGNGAGCGGAACGAG
Sequence 18
GGGAGTCGACCNCGCGTCCGGGCGGTGGGTGTCCGCTTCTCTCTGCTCTTCGACTGCACC
GCACTCGCGCGTGACCCTGACTCCCCCTAGTCAGCTCAGCGGTGCTGCCATGGCGTGGCG
GCGGCGCGAAGCCGGCGTCGGGGCTCGCGGCGTGTTGGCTCTGGCGTTGCTCGCCCTGGC
CCTGTGCGTGCCCGGGGCCCGGGGCCGGGCTCTCGAGTGGTTCTCGGCCGTGGTAAACAT
CGAGTACGTGGACCCGCAGACCAACCTGACGGTGTGGAGCGTCTCGGAGAGTGGCCGCTT
CGGCGACAGCTCGCCCAAGGAGGGCGCGCATGGCTTGGTGGGGCGTCCCGTGGGCGCCCG
GCGGAGACCTCGAGGGCTGCGCGCCCGACACGCGCTTTTTCGTGCCCGAGCCCCGCGGC
CGAGGGGCCCGCGCCCTTGGGTCGCCCTGGTGGCTCGTGGGGGCTTGCACCTTTAAGGAC
AAGGTGCTTGTGGCGGGCGCCGAGG
Sequence 19
NATGTNGNNCNAAAAAGGCCNGCNTTANAGGCCAGGAAACNCGTAAAAAGGGCNCGCGTT
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CNGCTCAAGTCATGAGGTTGGCCGAAAACTCCGACAGGGACTTNTAANAGNATACCCANG
GGCGNTTTCCCCCTGGGAAGGCTCCCTTCGTGGCGCNTCTCNNTGTTTCCAGACCCCTGC
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GTANGGGTGCCGTTTTCGCTTCCAAAGNCTGGGGCCTTNTGTGCCACCGGAAACCCCCCC

Sequence 20
TTCGGGAGTCGACCNCGCGTCCGCCTGGAGCCGCCAGAGTTTCCGCACCCGGGAGGGAGA
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GCCAGGCTGTGAGGCTCGAGAGACAAGCAGTGGAAGAGTTGCGGCCTGTTTCATCTCTGG
ATTGTAAATCTGAGCCTCCTTCTGGCCCCTGGAAGGGGACAGCATCACGATGGAATGATT
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TTTGATGACTCAGAAGCTATTGTTAACAATAAGG
Sequence 21
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CGCCCTGGACGTCGTGAGAGTGGACTGTGGCCAGGCTCCCCTGGACCCTGTCTACCTGCC
GGCAGCCCTGGAGCTCCTAGACGCCCCTGAACACTTCCGTGTGCAGCAGGTGGGCCACTA
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GCCCAAGGCCCAGCCACTTCTTCGGGCCTTCTACCCAA
Sequence 22

TABLE 1
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CGCGTCCGCCCGGTGCCTCCGCCCATGGAACGCGCGGAGTGGCGCCGCCGCGGCTACGCG
CCGCTGCTCTATCTGCAGTCACACTGCGACGTGCCAGCGGACCGGGACCGCTACGTGCGC
GAGCTCATGCGCCACATCCCGGTAGACTCCTACGGGAAATGCCTGCAGAATCGGGAGCTG
CCTACCGCGCGGCTACAGGACACAGCCACGGCCACCACCGAGGATCCAGAGCTCTTGGCT
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ACAGAAAAACTGTGGCGTCCCATGCACCTGGGCCGCTGTGCCCGTGTACCGCGGTTCTCC.
CTCTGTGAGGGACTGGATGCCGAACAATCACTCCGTCATCCTGATTGATGATTTTGAGTC
TCCTCAGAAGCTGGCAGAGTTTATTGACTTTCTGGACAAGAATGATGAGGAGTATATGAA
ATACCTGGCATACAAGCAACCT
Sequence 23
CGCGTCCGGCTGGGCGAATNAGGGATTCCGGTTCACAATGGATGCTGATAAAGAGAAAGA
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GGAGGAAGACCAGGAGGAGGATGAATGCAGGACCACCTTGAACAAGACTATGATCAGTCC
TCCACAAACTGCTCTGAAGAGTGCAGAAGAAATAAACTCAGAGGCCTTCTTGGCATCTGT
GGAGAAGGATGCAAAGGAACGAGCCAAGAGAAGAAGGGAAAACAAAGTCTTGGCGGATGC
CCTAAAAGAAAAAGGGAATGAAGCATTTGCTGAAGGCAATTATGAAACAGCTATCCTGCG
CTACAGTGAGGGGTTTGGAGAAGCTGAAGGACATGAAAGTGCTGTACACCAACCGAGCCC·
AGGCTTATATGAAACTTGAGGA
Sequence 24
GGGAGTCGACCNCGCGTCCGCTCCCTCTGAGTTGCGCTGGGCTTGGCTGCTGCACCATGA
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CCAAGCAGAGCCGCTACGAGGCGGTGGGCTCGGTGCACCAGGCCTGGGAGGCCATCCGCG
CCATGAAGGTGCGGGGGCGCCCCGGCCATAGCCCTGGTGGGCTGTCTCAGCCTCGCCGTGG ·
AGCTGCAGGCGGGCGCCGGGGGGACCGGGACTCGCCGCGCTCGTGGCCTTCGTGCGCGACA
AGCTGAGCTTCCTCGTCACCGCCCGGCCCACCGCTGTCAACATGGCCCGCGCCGCCCGCG ··
ACCTGGCTTGATGTTGCAGCCCGGGAGGCCGAACGGGAGGGGCGCTACGGAAGAGGCCGG
TCCGGGAGAGAGTGATCTGCTGCACCGAGGACATGCTGGAGAAAGACCTCAGAGACAACC
GAAGCATTG
Sequence 25
GGAGTCGACCNCGCGTCCGGGATAACGAAGCTGCTACCATGATGATGGCTGATCTCATGT
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CAGACTCCTCGAGTTCAGGGATCACACCATATTCCCAATATCAGACAAAATGCCACACAC
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CAACCACAAAATTTTAAATAATTATATGACATTATCTCGTTTGATTGATCTCCTAAGAAG
ATGTGGAAAACTCGA
Sequence 26
ACCGTCCGGGGCCATCCAGGAGAGCCTCCTACCAGCACAGAAGGCCTGTGCCCCAGCGCC
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GAGCTGGAGGAATGGGAGCTCCGGCTCCAGGAGGAAGAGGCTGAGCTCCAGCAAGTCTTA
CAGCTGTCACTCACTGACAAATAGACCTTTCAGCCTGTGAGCCTCTGCACAAAGCAGAGG ·
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CGTGCATGCAGCAGGCAACAACTGCCCCTTCTTTATGCAGAGGTGCAGAACCAGGGACTC
CTGGGCCCATCCAGGCTGCTTCCTTGGGGTGG
Sequence 27
NCCNCGCGTCCGGCCGGCGATGCCGCGCCCCCGGGCCGGGCTGTAGCGGGGCCGCGGCTG
GACGTGTGCGCCGGGCAGGCGGGACATGGAGGTGGTGGACGAGACGGAGGCGCTGCAGCG
CTTCTTCGAAGGCCACGACATCAACGGTGCCCTGGAGCCCTCCAACATAGACACCAGCAT
CCTGGAGGAGTACATCAGCAAGGAGGATGCCTCCGACCTCACACTGCCGGACTCTCCCCC·

TABLE 1
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AGACTCGGGCTCCGAGGCCTACTCCCCCCAGCAGGTGAATGAGCCCCACCTNCTGCGCAC
GATAACCCCTGAGACACTGTGCCACGTGGGGAGTGCCCTTC
Sequence 28
CGCGTCCGCNAGGGAGGGCCGAGCGAGGCGCAGGCAACCGGGCAGCAGGCATGATGCCCT
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TGGGCATACTGGTGGTCACCTTCAGCATGGTGGCCTCTTCCGTCACCACCACCGAGAGCA
TNAAGAGGTCCTGCCCGTCTTGGG
Sequence 29
ACGCGTCCGATTTTAGTNGCAAGGAGTCCATGTGTTCAACTCCAGCATTTCCTGTGTCTC
CAGAGACACCGTATGTGAAAACAGCGCTGCGCCATCCTCCGTTCAGCCCACCTGAGCCCC
CGCTGAGCAGCCCAGCCAGTCAGCACAAAGGAGGACGTGAACCACGAAGCTGCCCTGAGA
CGCTCACTCACGCTGTGGGGATGTCAGAGAGCCCCATCGGACCCAAATCCACGATGCTCC
GGGCTGATGCGTCCTCGACGCCCTCCTTTCAGCAGGCTTTTGCTTCTTCCTGCACCATTT
CCAGCAACGGCCCTGGGCAGAGGAGAGAGAGCTCCTTCTTCTGCAGAACGCCAGTGGGTG
GAGAGCAGNCCCAAGCCCATGGGTTTCCCTGCTGG
Sequence 30
CCGGTTNCTTGTNNGTTNATTGATTTAAAATAGAATATCAATTGAATTTAGAAAATTCTC
AAAAGCCAGTTTAATGCTGTTCATCTTTTAAGGCCAAAAAAAGTTTAATCCAGAGGCAGT
CTTTCATTCTGCACTAATTTATAATTTAGATCAAAGAACTAATTATATATCTCAAATTTA
ATAATAAAAAGGTATAGTAATGAGAATTAAATTTATGGTAAATTATATAACTCAGAATGT
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AAGTGGAATGTTTATTCACCCTTATTTATATACTTAAAAGACATTGTATTGGCCTGGTCT
CGAACTCCTGACCTCAAAGGTGGATCCACCCACCTCGGCTTCCCAAAGTGCTGGGATTA
Sequence 31
GCCGGTGATTTTGAACAATTCTGAAATATTTCAGGTAAGATTAATAACATCCAATTACAA
ATATATGTTTCAATATTTTATACGTATGTCTACTTTGAAAGTTAAACCAATAGTATAGAA
AGCCTAAGAATGAACACTGATTGGACATACTCACAGAAATTAAGGGAAAAACACATATTG
TAAAATTCCTGTCAATGTTTGAGTAGAATACAGAAGTACATAGCAGTCTTCAATTTTTAA
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ATTTATACTAAGTAAGGATATAAGATCACAGAAGCTTAGTGTTATAACGGAGACTTCACA
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AGTGCCAGAGGTAAGTATAAAAAGGTTATGTATGAAAGACATTTATTTATAGGAGAATTT
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Sequence 32
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CAGCAGGAGGGTGAGGCCAGCTCTCAGGACATGACTGCACAGGTGACCAGCCCATCGGGC
AAGGTGGAAGCCGCAGAGATCGTNGAGGGCGAGGACAGCGCCTACAGCGTGCGCTTTGTG
CCCCAGGAAATGGGGCCCCATACGGTCGCTGTCAAGTACCGTGGCCNGCACGTGCCCGGC
AGCCCCTTTCAGTTTACTGTGGGGCCGCTNGGTNGAAAGGTGGTGCCCACAAGGTGCGGG
CCCGGAGGCAC
Sequence 33
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AAATAAGCATGGAGATCCAGAAGGAATCTTAAGAGTTTTTCTATGCAAGTGAAGATGGAA
GAAAATATGTATTTTACAAAAGATAAATTACAAGTACCTTATTTGCTTTGCAAAATAACT
TATCATGTTCTTCCACTATTTTTATTATATTTTAATTTTAATGAAACTTATATAACATTT

TABLE 1

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ACACTAAATTTTAAATACATGGCTCAAGACAAAAAAATGGGGAAAATATTTTTTAAAAAA
TCACCCCAAATCCTGGTACTCAGACATAACCACTATTCAAACTTGGCAGAGTAATATTTT
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ATCTCCTGGGTTATTATCTGCTTTTTTCCC
· Sequence 34
· ACGCGTCCGGGACAAGAGAAACATAAGCNGGAAAAAAGGAGGAGGAATAAACACACGCCT
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GAGGCCCCGACTCAGTGCATGGGAAAGAAATCCTCACTATCAGAAAACAGAGGGGCAATC
TGCTGCTCTCCCTTTCCGGCCAAACACGTCACCCATCAACCGGATACCTACCAAGAGGCT
TTCAGAGGAGGCGCCCAAGGTCTCCCAGGCCCGCCCCTCCCCAATCACGCTCCGCTCAGC
CCCCTCAACTTTTGGCCTCCGGGAAGTTCGCAGCGTNTCTCACGCTTGGCAGGAAGTTCC
CGCCAAGGCTTTCGGAAAATCCTTTAAAAAGCAACGCTTGCGCTGGGCGGGGCTTTGGTG

Sequence 35
CCCCGCGTCCGGTAGATTGCTTGTGGCTGGCAGTGAAGATGGTGGAGTTCAACTTTTTGA
TATAAGTGGGAGGGCTCCCCTCAGGCAGTTTGAAGGCCATACAAAGTAAGAGACAGTTGG
TTTCTGTGTGTTCTGGTTTTATTTTGTTGTAAGCTCTTTTTTTCTCTGGACTTTGGTTAA
AAAGATAGAGATCAGTTTTATGGAGATTATTTGCCTATAGGTACTATATTTCCTGATTGT
TCTAAGAGTGCTTAACTTGGGTTCCGTGGTCCAGTTTCATGGGGCTTATGAATTCCCTAG
AATTGTATGTGATATTTTAGGAAATACACGTTTATCTAGGGAGCTACTCTGTAGCTTTTG
GTTAACTTTAGTGGGGTCTGTGGCCCAGCTGAGATTATGAATTACTGACCTGAAGACAAC
CTTACAGCTGGTAATGACAGCTCTATAGGCCTGTACTGTCTTAGAGGCTCTTATGTTGAA
GTCAAGTANGAAGGTGGATTTTCTTCTTGAATTATAGTGTTTTGCCCCTTAATAA
· Sequence 36
CNCGCGTCCGCGGACGCGTGGGGGCGAGGGCCGCTGGGGCCGCGAAGTGGGGCGGCCGGG
TGGGCTACGAGCCGGGTCTGGGCTGAGGGGCGCGGCTTCGCGGTGGACCCCAGCCCGGCA
ACGGGAAGGCGAGCTCTCCTCCACCGTCCAAAGTAAACTTTGCCGCTCCTTCCGCGGCGC
TCCCGAGTCCTCGCCGCCGCCGGGCCGCCGCAGTCCGCGAAGAGCCGTCCTGCGTCAGGG
CCTCCTTCCCTGCCCCGGCGCGGGGCCACTGCGCCATGGACGCCACAGCACTGGAGCGGG
ACGCTGTGCAGTTCGCCCGTCTGGCGGTTCAGCGCGACCACGAAGGCCGCTACTCCGAGG
CGGTGTTTTATTACAAGGAAGCTGCACAAGCCTTAATTTATGCTGAGATGGCAGGATCAA
GCCTAGAAAATATTCAAGAAAAA
· Sequence 37
GCGTCCGCGGACGCGTGGGCCGCCGCCGCCGCCGCCGCGATGTGACCTTCAGGGCCG
CCAGGACGGGATGACCNGGAGCCTCCGCCCCGCGGNGCCCGNGGCTCGCCTCGGCCTCCC
GGGCGCTCTGACCGCGCGTTACCCGGCCCGCCATGGCCCCCTTCTCTCTNGCCCGGGCNC
ACGCTCGACCCTGCGCNCGTATCGCCAGCAAGTCTGCTGCCTGCATGCTGCNTGGCTCGC
GAGNNGTTGGCGCGCNTTGCNCTGNNGCCTGTTTGCACGAGCNGCCGCCGAGGCCCACTG
CANGNTTANCTCGACGGTCTCCNAAGNCANACCGCNCCGCCGNCCCTTTCCAAGGNTCNT
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TTNGNCNGATGNGNATGAGNAANCCTTGTAGNCAAGANCCCGTCCCNAAGNGGNAGNGNC
AGCCCNGGGGAAGGGTTGGTTTTCNNANGNTAAACCGNAACCCCCCGGAAGTNAACCGG
NGATTTTAATTTATTTTTACCCCNCANANGNAAATAACCTTTNAANAACCATGGGNCATT
NNAAANCAAAAGNTAAATTNGGGGGNAACTTAACCGNTAAACCANCCCAAAA
Sequence 38
CNCGCGTCCGGCGGGTCCCGCCGGCGGGTACCTGGGCACTGCGCCCCATCTGGACTGAAA
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TAACTCCGCAGTGGAGGTGGATTCCGTCCAAGACGCCCAACGTGGCTCCGCGTAGCAATC
AGCGCTGCAATCCTGGCGGTTACCTCAGCGGCGGCGTCTCTCTCTGCGCCTCACACTCGC
AGCCCGCGGCCCTCCCCAACTTAGGGCGTTTACAAAAGAAACTACTCCAGACGCGCTGCA

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AAGGGAGGCGCATGTGCCCGAAAGCTGGCGATCAGACGGGGGGGGGCATTCTGCATGTGT
GATGTTTCTGGGGGCGGTGGGGAGTGTGTGTCGGGGTCGGGGGGCGGG
Sequence 39
NTGGTCTTTCTTCCTAAGAAGGAGATGGAGCCAATTTCTCACAGCTCGTGCCTCAGTACT
GAGGGTATGGAGGAAAAGGCAGTCAGTCAGTGTCTAAAAATGACGCACGCAAGAGACGCT
CGGGGAAGATGTAGCTGGACCTCTGAGATTTACTTTTCTCAAGGTGGACAAGCTGTAGCC
ATCGGGCAATTTAAAGATCGAATTACAGGGTCCAACGATCCAGGTAATGCATCTATCACT
ATCTCGCATATGCAGCCAGCAGACAGTGGAATTTACATCTGCGATGTTAACAACCCCCCA
GACTTTCTCGGCCAAAACCAAGGCATCCTCAACGTCAGTGTGTTAGTGAAACCTTCTAAG
CCCCTTTGTAGCGTTCAAGGAAGACCAGAAACTGGCCACACTATTTCCCTTTCCTGTCTC
TCTGCGCTTGGAACACCTTCCCTGTGTACTACTGGCATAAACTTGAGGGAAGAGACATCG
TGCCAGTGNAAGAAAACTTCAACCCAACCACCGGGAT
Sequence 40
CACCGNNCGCGCTCCTTCTGCCGCCAGGGCGAGGCTGGCACCCGGCCAGCGCGGGCAGGG
CCACGGGTGCCCGGCTGTTTCCCGGTTGTGGAAGGCGCTCAAGGTGCGCGGCCCGGGGCG
CGCTACTGGGGGCGCCCTCCGCGGTGGGCAAGCGCGCCAGGGATCGGCCTGGGCANGCCG
CGGGGCGCGCGAANGCTGCGCTTTCCCTACGCCCCCCCTCGCTTCCTCCGGCACGGCGGC
AACGGAGATTTCCTCTCGGGGAAACTACGCGGATCCTTTTCGGGGATCCTCGCCCCGCCC
CAATTTCTNCGCCCCCTCCCCTTTGCTGGGGCGCCTGGGCTGGCCCGCGCAGGGGA
Sequence 41
CNCGTCCGGTTCCTAACACAGACGAACTCAGCTTCCTTTGCCATGCCTCTGACTCGAGCC
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CCACTCTTACGCCTCTTCCAGAAACACAGGCTACCTCCCCCCAATTCCCCAGTGCCACTC
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CCCTCCCCGGGTCGTCTGTTTTCTTCTATGAAGCAAATATTACTCATCAAATATAGGAAC
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TTTAAGTAGATGATGGTT
Sequence 42
GGTGTCGACCNCGCGTCCGCGCTTCTCNCCTCGGCCCGTGGAGCCGGGGCGTCCGGGCGT
AGCCCTCGCTCGCCTGGGTCAGGGGGTGCGCGTCGGGGGGAGGCAGAAGCCATGGATCCCG
GGCAGCAGCCGCCGCCTCAACCGGCCCCCCAGGGCCAAGGGCAGGCCGCCTTCGCAGCCC
CCGCAGGGGCAGGGCCCGCCGTCCGGACCCGGGCAACCGGCACCCGCGGCGACCCAGGCG
GCGCCGCAGGCACCCCCGCCGGGCATCAGATCGTGCACGTCCGCGGGGACTCGGAGACC
GACCTGGAGGCGCTCTTCAACCGCCGTCATGAACCCCAAGACGGCCAACGTGCCCCAGAC
CGTGCCCATGAGGCTCCGGAAGCTGCCCGACTCCTTCTTCAAGCCGCCGGAGCCCAAATC
CCACTCCCGACAGGCCAGTACTGATGCAGGCACTGNAGGAGCCCTGACTCACAAGCATGT
TCGAGGCTCATTCCTCTNCAGCTTTCTTGCAGTTGGGAAGC
Sequence 43
GTCGACCACGCGTCCGGGAGCTGCGGCGCCCTCCCTTATCGCCTTGGCAACGACCCAGCC
GCGCCGCGAGGAGAACCGGGAATGGAGGTCGTGGCGTGAGGGGCGCCGAGCGAGGGGAGG
CGCGGGCCACGGGAGTTCCGGGAGTTCCGGCGTTGCCCGGCAGTCCGCAGTCCTCGGCGG
GAAGGCTGTCCCGGCGCCTCAGGCAGCTCTGCGTGGGCCGGGGTGACTTCCTCGCGATCC
CCTGCGCGAGGTGAAGGGCAGGGACCTTTGCCGCGCCTTCCACGCGCCGTGCCCCACCGG
CGAAGTGGGCTCCATCTTCCTTCAAGACTTGTCGCTTCGCGGACAGGGCGCCCGTGGGTT
CTTCCCGGCCCTTCCGTACCGTCCTCTTTCCAAGCGGGCTTCCGGAAAGCGGGTTCCTTG
TCTTTCGGACGCATTTTCACCCCGCGCCGGGGAGGAGCTTNCCGGGNAAGGGTTCCACGG
CGGCCGAGGGTTTTCC
Sequence 44
CGTCCGCGAGACTCCCGCGCCCACCACCCCCGGCGGAGCTGCTGCTGAGCCACTCAATCT
GAGCCCTGGCTACTAATAAAGTTCGTTTAAAAATCATAATCATTCTTAAGAGAGCGAAAG

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AGGGTGCGAACTAGCCGCTCGGCCCCGCANGGAGAGCTGGCGCGTCNGGAGGAGACAGCN
GCGGCAGCGGTTGCGCCGCGACCAGGAGGAGCCGGTGGCGCCGGGCGGCGGGTCCGCGGC
CGGTGGGGGGACNGTGAGTAGCGGCTCGCGCTGCGGTGCAGCGGCGCTGCACTCACTCGCC
CTCTCCAGGGGCTGGGGGTTCGTCCGGCTCCACTGGGGAAGACTCAGCTTCTCCCCGGGG
TCCCGGGTTGTGCCTTACTCTCCGGAGTGGGCAGGGGTATCGAGGGCAGGGGCCTCCCGG
CCCGGCTCCCCCATCCCCCGGTTCGGACCGACGAGCCGCCGGCTTCTTCCCTTCCCTGAG
CACCGATCCCAAGTTCCA
Sequence 45
TCACCACGCGTCCGGGCGTCCGGGTACCCGAGGGCTCTCCCGCGTTGCTGGCACCGCTGG
CGCCGCGGTCTCGTAGCGCATGGGCCTCCTCCGAGGCGGGCTCCCATGCGCTCGGGCCAT
GGCGCGCCTGGGCGCTGTGCGCTCCCACTACTGCGCCCTGCTGCTGGCCGCGGCGCTGGC
CGTCTGCGCCTTCTACTACCTCGGCTCAGGCCGGGAGACCTTCTCCAGCGCCACCAAGAG
GCTGAAGGAGGCCCGCGCCGGGGCTCCCGCCGCGCCCTCGCCGCCCGCGCTGGAGCTAGC
GCGGGGCTCCGTGGCGCCAGCCCCCGGCGCGAAGGCCAAGAGCTTGGAGGGCGGCGGTGC
CGGGCCGGTGGACTACCACCTGCTGATGATGTTCACCAAGGCGGAGCACAATGCCGCGCT
GCAGGCCAAGGCCCGCGTCGCGCTTGCGCTCA
Sequence 46
CCACGCGTCCGTGTCGGGCCGGCGCTCCCTTCTCTGCCNGGTGGCGAGTACACCTGCTCA
CGTAGGCGTCATGAGGTCTCCGGTTCGAGACCTGGCCCGGAACGATGGCGAGGAGAGCAC
GGACCGCACGCCTCTTCTACCGGGCGCCCCACGGGCCGAAGCCGCTCCAGTGTGCTGCTC
TGCTCGTTACAACTTAGCAATTTTGGCCTTTTTTGGTTTCTTCATTGTGTATGCATTACG
TGTGAATCTGAGTGTTGCGTTAGTGGATATGGTAGATTCAAATACAACTTTAGAAGATAA
TAGAACTTCCAAGGCGTGTCCAGAGCATTCTGCTCCCATAAAGTTCATCATAATCAAAC
GGGTAAGAAGTACCAATGGGATGCAGAAACTCAAGGATGGATTCTCGGTTCCTTTTTTTA
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GCTGCTAGGATTTTGGGA
Sequence 47
CGCGTCCGCGGACGCGTGGGCGGGGCCGCGGAGCCGGGCCGGGGCATGCGCCGTCTCCGN
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GGCGACCCCGCGGCCAAGGCCCCCGGCGGAGCGGNTCCCGGGCGCCCCGAACTAGCCCCC
AACTTTGGGCGAAGTTTGCCTGCGCCTCTCCCCGCCCCCACGCGGCGCGCCGGGGCCGCG
GACGGNAGCGGCCCCCGGGGATGCGCCTTCCCGGGGTACCCCTGGCGCGCCCTGCGCTGC
TGCTGNTGCTGCCGNTGCTCGCGCCGCTGATGGGAACGGGTGCGCCGGCCGAGCTGCGGG
TCCGNGTGCGGCTGCCGGACGGCCAGGTGACCGANGAGAGCCTGCAGGCGGACAGCGACG
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Sequence 48
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AGATTCTTTATCTCATAAACCAGGGGGAGCACCTGGGGACCACGGAAGCGACCGAGGCCT
TCTTTGCCATGACCAAGCTCTTTCAGTCCAATGATCCCACACTCCGTCGGATGTGCTACT
TGACCATCAAGGAGATGTCTTGCATTGCAGAGGATGTCATCATTGTCACCAGCAGCCTAA
CAAAAGACATGACTGGGAAAGAAGACAACTACCGGGGCCCGG
Sequence 49
ACGCGTCCGCAGAANGCTCTCAGATGGGACAGTCTTTTACTTTCATTCTCACCTCTGTAA
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AAAATCAACTTAGGAAGTGAATTTGAGGGTTGGTGTAATTTTAAGCCCAGCCTCTGATCC
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CTTCGTATAAGTCCCAAAGAACTCAGGCTTATAGCACTAAGCAAATTACCAGTGGGAGGA
GGAGGACCTGCCACGGAGCTGGATAATTACATTTAAATATTTTTGCCANTCTGTTGGAGA
C

Sequence 50
NCGCGTCCGGCAGGCGGGTCGTAGAGAGCGTTCANGCCGTCTGTATATCTCCCCAGATAC
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ATGCAACGGAGATCAAGAGGGATAAATACTGGACTTATTCTACTCCTTTCTCAAATCTTC
CATGTTGGGATCAACAATATTCCACCTGTCACCCTAGCAACTTTGGCCCTNAACATCTGG
TTCTTNTTGAACCCTCANAAGCCACTGTATAGCTCCTGCCTTAGTGTGGAGAAGTGTTAC
CAGCAAAAAGACTGGCAGCGTTTACTGCTCTCTCCCCTTCACCATGCTGATGATTGGCAT
TTGTATTTCAATATGGCATCCATGCTCTGGAAAGGAATAAATCTAGAAAGAAGACTGGGG
AAGTAGAT

Sequence 51
GCGTCCGGAAGGTCCTTGAGCCATCTGGATGGCGGGCAGTCTGGCACACTAATGTGTTCA
AGGTGCTGGTTGAGATCACAGATGTGGACTTTGCAGCCTTGAAGGCAGTGGTGAGGCTTG
CTGAACCATACCTCTGTGACTCTCAAGTGAGCACTTTTACCATGGAGTGCATGAAGGAGC
TCCTTGATCTGAAGGAGCATCGGTTGCCCCTGCAGGAGCTGTGGGTGGTGTTTGATGATT
CAGGA

Sequence 52
GTCGACCNCGCGTCCGGAAAAAAAAAAATGACCCAGAGATATTAACAACTTGACCTGGTTA
TACAGTTAGATATTTGCACAGTCTGGACTCAAACTGGAGGCTTCTGACTCCTCATCTAGG
CTCCTCTCACTCTGCCATTGCATGGGTTTTCTCATATACCTTCTCTCATAAGGTTTTCAC
AAATTTGTCACCGTCAAATAATTATCAAAATTATTCACACTATTATAGATGAAAATAATG
TGCTTATAAAGATTAAGTAACTTTCCTGAGGGCGCAGGTATCTGGTTCACATAACAACTA
GCCTGGCTTAGAATAAACACATATTTCCTGGTTCTGAAGTTGGTGTCCTTCCTACCACTT
TCTGCTGTCTCCTAAAGATAAAGAATGTTATTGGCTCACTGAATTAATCCATTCTGTTCC
TGGCTGAAATAAAAATTGGTATATTCCTTACGTGAAGTGTCAACAGGAAGGGGGCTTTTA
CAACTTCCTTT

Sequence 53
GGAGTCNCCACGCGTCCGCGCGCTGGAGGAGTGGAGCAGCACCCGGCCGGCCCTGGGGGC
TGACAGTCGGCAAAGTTTGGCCCGAAGAGGAAGTGGTCTCAAACCCCGGCAGGTGGCGAC
CAGGCCAGACCAGGGGCGCTCGCTGCCTGCGGGCGGGCTGTAGGCGAGGGCGCGCCCCAG
TGCCGAGACCCGGGGCTTCAGGAGCCGGCCCCGGGAGAGAAGAGTGCGGCGGCGGACGGA
GAAAACAACTCCAAAGTTGGCGAAAGGCACCGCCCCTACTCCCGGGCTGCCGCCGCCTCC
CCGCCCCCAGCCCTGGCATCCAGAGTACGGGTCGAGCCCGGGCCATGGAGCCCCCCTGGG
GAGGCGGCACCAGGGAGCCTGGGCGCCCGGGGCTCCGCCGCGACCCCATCGGGTAGACCA
CAGAAGCTCCGGGACCCTTCCGGCACCTCTGGACAGCCCAGGATGCTGTTGGCCACCCTC
CTNCTCTTCTCTTGGAGGGCGCTCTGGCCCATCAGACCGGATTATTTTTTCAA

Sequence 54
CNCCCGTCCGGAATNCCCATAGTTAGCTGCTGTGCTTTCACAACTTCTTTCTCTGTAAAT
TCCTCGCTTGGCNCTGAGAAGGAAAAAAGATGTTCGTAAAGGGCTCAGCGAGGAATTTAC
AGAGAAAGAAGTTGTGAAACCACCATAGTTAGTTGCTGTGCTTTGAATTTCTTTTGCTCA
AATGGCCTCAGCGAAATCTTATTTGCCTATAGCATATCTACAAAAAATTTTCCTAGACCG
TCTTTTCTACAACTGGATGGTAAAGTTGATTGAAGTGTGCCTCATGTAGCTTTATGTTTG
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AAAGAAGAGTGTAAGAACCATTATAGGGCTGGGCTCACGCCTGTAATCCCAGCATTTTGG
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AAACCCCATCTCTCTAAAAATACAAAAAT

Sequence 55
GTCGACCNCGCGTCCGCAGCCTTCGGCTGCGGAGGGGGCTCGGCGGCGGCCGGCGGAGAA
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GCGGGCGTCCCGGGCGGACGCGGCGCGGAGACTGCCGGCGCGTCCCGGGGGTTCCGATTT
GAAGACCTTGCTTCTCATCACCCACTGGATTATGCCCCAGGCTTTCCTACCCAATGATCC
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TGGCCACCAGGTCTACAGGAACCTTGCAGCTTCCACCACAGAAGCCTTTTGGGCAGGAGG
CTTCCTTGCCTCTTGCAGGGGAAGAAGAGTTATCGAAGGGAGGGGAGCAAGGACTGTGCC
CTGGAGGAGCTATGTAAGCCCCTGTACTGCAAACTCTGCAATGTCACCTTGAACTCTGCA
CAGCAAGCCCAGGCTCATTATCANGGTAAAAATCATGGTAAGAAA
Sequence 56
ACCNCGCGTCCGGACCTGTTGGCGACATGGTGGCACCCGTGCTGGAGACTTCTCACGTGT
TTTGCTGCCCAAACCGGGTGCGGGGAGTCCTGAACTGGAGCTCTGGGCCCAGAGGACTTC
TGGCCTTTGGCACGTCCTGCTCCGTGGTGCTCTATGACCCCCTGAAAAGGGTTGTTGTTA
CCAACTTGAATGGTCACACCGCCCGAGTCAATTGCATACAGTGGATTTGTAAACAGGATG
GCTCCCCTTCTACTGAATTAGTTTCTGGAGGATCTGATAATCAAGTGATTCACTGGGAAA
TAGAGGATAATCAGCTTTTAAAAGCAGTGCATCTTCAAGGCCATGAAGGACCTGTTTATG
CGGTGCATGCTGTTTACCAGAGGAGGACATCAAGATCCTGCATTATGTACACTGATCGTT
TCTGCAGCTGCAGATTCTGCTGTTCGACTCTGGTCTAAAAAGGGTCCAGAAAGTAATGTG
CCTTCAAACTTTAAACTTTGGAA
Sequence 57
GTCGACCACGCGTCCGTCTCATTTGTGAAGAGGTCTGTCTTCCTGAGGAAGCAGGGGACC
CTCACCTGTGAACCAAGTGTGCCATGGGAGCTGCTCCATGTCCAGGTCCAGGTCTCCTGG
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GGGGGCTGACCTGCTTGCTGACCCCGCTTGCTGCTGCCTGGCTGACCTGACTCAGCCACG
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GCTGCTTGAGATAGCAGCCTCTGGCTAGGCCCTTGGCGTGGCCAAGCCAATCAGGCAGGT
TTAGAGCCTGGTGCCCCTAGACAGGTCCTGCAACCAAGAACAGGGGGTAGCCTTCAAAGG
CCAGCCCTGCCTTCCAACCACCGCTCCACAGCGAGGGAAACCAAGGCTCTTAGGGCAGGA
GGCTTGT
Sequence 58
CCNCGCGTCCGGGGGAGCAGGGATCAACGGTGGTCCCCGTAAACCTGACAGTAAACCTGAC
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TTTCTTTGGAGTCAAGGCGCGACCTCTCAGGGAGGAGACTGCTCCTGGTTGCCCACTGCC
GGGTCATCCCAGCTTGCAGTGGAACCCTCCGCAGCCTGGCCTCTTCCAGGGTAGCCCCTC
ACTCCCCTCTCTCTTGTCCTAGGATAAGGCCGAGGAAGGCTGACGAGTTCCAGCTCTGGG
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TCCAGTGTGAAACGTGGTGAAGGCATGAGGGGCTATGGGAGCCCCAAGGCCTCTTTCAGA
GATCTCCTCTGGGTCCCATGTGACCCCGTGGCTATCCCCAAAGGCAAGAGGGTCCCCAGC
CCTGCACCAAGGCCCTGGG
Sequence 59
CCGAGGAAAGGAGTTGGTTCGCGCAGGTGCGGCGCCTGGGTCCCCATGGCGCTGTGGCGC
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GCGCCCCGGGACCCGTCTCCCCCGAGGGCCGGTTGGCGGCAGCCTGGGACGCGCTTATC
GTGCGGCCAGTCCGGCGCTGGCGCCGCGTGGCAGTGGGGTGAGTGCCAACGGGGCCTGGG
TCTNTGAGCCTCCGAGGTCGGCCTTGGAGGTCGGGCGGAGCCGCGCAGAAACAGGGCTTC
TCAGAGGNCCCCGGGAGGCGCTTGCTGTCCGCGCTGGCCCC
Sequence 60
CGCGTCCGGTGGGAAGCCAGAAGATAAAACCAAATGGCTGGGCACGTCTTTAGGTTATTC
CTAGCTAAGAGTTAAGAGTTGTAAGCTCTCTCATTCTTTGTTCTTCAGCCTTAAACTATC
TTTCCTTCTATTAACTTTATTTGTCTCAGTTACAATGATAGAGGTAACTTCACATACTAA
AAGAAATTAGGTTACCATGTGAAACATTCTTCTTGGCTTGTGCTAATGTTATCAGATCCA
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TATCATATGTTAAAGTGAGAGTTTTTATACATGTTGAAAGAAGTTGAATGACATAACAAA
TAGTTACTGAGGCCTCCATTTTCTTACTTCACAGTTAAAATTCCTGTTTCTCTTTGGGTA
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ATTAAAAGTAG

Sequence 61
CGTCCGGAGCATCGCGCACTGCGGCCGGGTCACCGACGTGGGCATCCGCTACGTGGCCAA
GTACTGCAGCAATGCTGCGCTACCTCAACGCGAGGGGCTGCGAGGGCATCACGGACCACG
GTGTGGAGTACCTCGCCAAGAACTGCACCAAACTCAAATCCCTGGATATCGGCAAATGCC
CTTTGGTATCCGACACGGGCCTGGAGTGCCTGGCCCTGAACTGCTTCAACCTCAAGCGGC
TCAGCCTCAAGTCCTGCGAGAGCATCACCGGCCAGGGCTTGCAGATCGTGGCCGCCAACT
GCTTTGACCTCCAGACGCTGAATGTCCAGGACTGCGAGGTCTCCGTGGAGGCCCTGCGCT
TTGTCAAACGCCACTGCAAGCGCTGCGTCATCGAGCACACCAACCCGGCTTTCTTCTGAA
GGGACAGAGTTCATCCGGCGTTGTATTCACACAAACCTGAACAAAGCAAATTTTTTTAAA
AGCAGCGTATGTAAAGCACCGACACCCACTCAAAACAAGCTCTTTCTTTCNGGAAGGGTA
TTAAGGAAT

Sequence 62
NCCACGCGTCCGCCAGNCTGTGAAGGATCCCAGACTGGCATATGCAGGAGGAAATGGGGC
GGGCGAGGAGTAAGGACCCCAAAAAGCAGGGGTAGGGAAGGGCCCTCCCAGCGCCCCACT
GTAATAGGGGCCTCATCAATGCCCCATGCTCACTGAATAAAGCACTGCCAGCGAAAGGTG
AAAAGAGGAACAAAGAACATTCTCCTGGACGCCACCCACAGAAAGCCACGTGCAGGCTTG
GCCCTCACCTTGGGGACCTTGGACACGGAGCTGGTTATGTCACATCTGGCTCTCAGAGCT
GGGGCAGCGTCTAGGAGGCCTGATGTAGAAAGCACTCAGCTAAGCCCTAGTTACCGGCAC
ACGGGCACCAGCGCCCCCTCTCAGCAAACTTNCACGTCTTATGAAATTAGCACTGGATTT
CCACTTCAATTGGA

Sequence 63
CCCACTGTAATAGGGGCCTCATCAATGCCCCATGCTCACTGAATAAAGCACTGCCAGCGA
AAGGTGAAAAGAGGAACAAAGAACATTNTCCTGGACGCCACCCACAGAAAGCCACNTGCA
GGCTTGGCCCTCACCTTGGGGACCTTGGACACGGAGCTGGTTATGTCACATCTGGCTCTC
AGAGCTGGGGCAGCTGTCTAGGAGGCCTGATGTAGAAAGCACTCAGCTAAGCCCTATTTA
CCGGCACACGGGCACCAGCGCCCCCTNTCAGCAAACTCCACGTNTTATGAAATTAGCACT
GGATTTCCACTTCAATTGGA

Sequence 64
NCGCGTCCGCTTCATCTTAGGATAAAGTCTAAATCTTTGTTTTTTGCTATTGTACTAAAC
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TCCAGCCACAATGAAGTACTTAAAACTCTGTGTCTTTGTACTTGCTGTTCTCTTGGCCTC
CAATTCCTTTTCATCTTTTCCATTCGGTAAAGTTTGTTTATCCCACAGGCCCTATCTTGG
AAGCCTCCAGCAACTTCTCCAGACAGAGGTGTTAGCAGTGTAGGATCAGATTTCTCAACC
ACGTCACTCCCATGTCTGGGTAGATATCTCTGCCCAAGTGTTCTCATAGCACTTGAGCAG
TACTCTCTAAGCGCCCAGGATCTACCATGTTGCTTTTTTAAAATTTGATTAATTTATTTT
TTTATACTGCTCCTTGTGGAGCANGGAGTGTTCCCAGAGTAGCCCACCATGTTATATTGA
ATGGATCTGTGTGCATAATGCAGCTGTCCATCTACATCGTATATTTTTGTCTCCTCAAGG
GTAGGGA

Sequence 65
GTTTGTATTCTGGATACAGGGGATACTGGGGCTCGCTATGTGTGTGGAGCCATCCCTTCC
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CTCCCCAGCTTGCCCAGTGCTCAGTGCCCCACTTGGCTCTTTTGCTACTTCGGGTCAGGT
GGAGCCTCTTGGGAATGTGAAGTGCCTTACAGAAAGATTGCACTTCAAGAGGAGAGGCTG
CAGGGAGCCATCCTAAACCCAGAGGCCTGGAGCTTACCGTGTCACTTTACTTTTGTACAC
AGGGGTCTCCTTAGTGCCCTCGAGAAGGATTCTTGGCCCTGAGCTTCTACTCCTGAGGCC
ACCTCTGTGCAGCCCCAGCTCCCTCAACTCTAGGCTGTAGTCTCAGTGGGAAAGCCTGGC
TTGGGGGTCTCCTAGGAATGTCCACCTGAAGGCACACTTGATAGGGGCTTGCACAACTTA

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TGTCTGCCAAGGCCACCTGAGGAACTCCTGGTGCCTATAAGTTCCACCTTCCCTTCCTTT
NCT
Sequence 66
CGTTCGGCAGCAGCAGCTGGCGGCCAACCGGCACAGCCTGGTGGAGAAGCTGGGGGAGCT
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CACCCCCACGGAGGAGACGCCCACCCCACCCCCAGCCGNCACCAGCGACCCCCCGGCCGA
AGACATGCTGGTGGCCATCCGGCGTGGGGTCCGGCTCCGCAGGACCGTCACCAACGACAG
GTCGGCGCCCCGCATCTTATGATGGCGCCACCCTCCCCATCCTCTCAGGCCCCAGTGCGA
GCAGGTGGCCTGGTCTGTGAGCCGCAGGCACTCAGAGCAAAGGCCCAGCCAGGAGAGAGG
ACAGAGCCAGGGCAGAGGCCATGCCACTTTATGGAAAGACACCTCACTTGGATTCCAGCA
TTTAAACAGGAAGTGACTTCTTAGCAAGCCTGGCCAGGACGGAGCCTGCAGGCCTGGGCC
TGGTTCGGGGTCTGTGTTTATGCTCTTCGGTCCCTTCTCTTCCTTCTCTGGGGCCCTGCCT
CTTCCTACCCATAAAGCACCAAAACCAGGGCCGCTGCCATGACAGAGGGGCCAGGCTGGC
CTTCCTTTCACATCCCGGCCTNTTCCAAGGCTGGTCCTGCCTNACTTCTTCTGGAATGTG
GGCCCCCTCTCCCTTGCTGACCCCTCTTCCTNTTGCTTNTNTTTGCTTTTCCANGCCCT
Sequence 67
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TTTTTATTTTGAGACAGTGTTCCACTGGAAGGGAGGGAAGGGCTTACATTCACAGACAGT
AAAGCAGGGCTGTGTAAGGAGCTACATTTACTTAACAGTCTCCTTTCCAGCTAGGTTTGT
TTTATTTATTTGCAAGTCAGCTAAGAATTAACCTTTTAAACCATCTAAAACAGGCAAGCA
ATATAAAGATTTCTACTAGTGCAAGGTAAGTGGTTTGAATATACAAGTGCCCTTTCCTGC
CACCCAGTCTCACTACCGTTTTAGTCCTGCAGCTGGGTAAAGCCACTATTGTGTGGAAAC
TCTCCCATGTGCCCTGTCTCTACCTCTGGACACACCAGCTCCTTCTTCCACCTATTCTAT
TCCTCAGTTAAGCCAAGTGATCAGAAGTAGTATTAAATGGGTAGATAATTTTA
Sequence 68
GCCACGCGTCCGGCGCCGGGTGCGCCAACTACGCAAAGACCAAGCGGGCTCCGCGCGGAC
CGGCCGCGGGGCTAGGGACCCGGCTTTGGCCTTCAGGCTCCCTAGCAGCGGGGAAAAGGA
ATTGCTGCCCGGAGTTTCTGCGGAGGTGGAGGGAGATCAGGAAACGGCTTCTTCCTCACT
TCGCCGCCTGGTGAGTGTCGGGGAGATTGGCAAACGCCTAGGAAAGGACTGGGGAAAATA
GCCCTGGGAAAGTGGAGAAGGTGATCAGGAGGCCGGTCCACTACGGCAGTTTATCTGTCT
GATCAGAGCCAGACGCGACGCGTCCACTTCGCAGTTCTTTCCAGGTGTGGGGACCGCAGG
ACAGACGGCCGATCCCGCCGCCTCCGTACCAGCACTCCCAGGGAGAGTCAGCCTCGCTCC
CCAACGTCGAGGGCGCTCTGGCCACGAAAAGTTCCTGTCACTGTGATTCTCAATTCCTGC
NTGGGTTTTTTT
Sequence 69
ACCCANACCTGGGAGGAATTAATGGAATGCTTGNCCCTGGGCAGCCTTAGAAACAGACCC
NAGCTTATCTAANGCTGCTCCGAGGCAGTGACCCAACTANGGCTCAGGAAGTCAAGAANA
TTGACCAAGCTTATAGTGATCACCTCTTGACCTTTGTGTCACAGTCNTTTTGCTTTTTAA
AACCCTTTTGTGAACCGNTTATGGCCTTTGATTCTGACAGGCATCNTAGTTGTGAAGGGG
AACANGGGCAGGATATAATGTTTCGTTTACCAAATACAANAAAATCNGANGTACCCAGNT
AGATCACAANATTTTTTGGGAGAAGGNCTNTTGGGTCTCTTCCAGGAGNTCACTTCANNN
TTGGNAACTTGACAGGGGCTTGGGGAATTTANTATTCCCCTTGGGCGCAGGGNCNCAAAN
GGGTGGCANTTTCCCTCCTTGGAGNTTTTTTTTTTCAAGAANTCCTTGCNTGGGGGAAAGA
TGGTTACNANNATCCCGGAATTTCCAACCCCCTTCCCTATTTTTTTTGGTTTAAGG
Sequence 70
CGCGTCCGGCACATTAAAAAAAAAATACTTATTTTTTATTATGGAAAGGTCTTGGAACATT
CTGATAGTGAGCTTCCGGCATTCATTTGCTGTATCTGGCTTAGGAGATGCTAGGGTGGCA
AGAAGAGGCACAGGCTTAGATGCGCTGGGTGGAGAGTTGGCTTTAGTAATGATGGTTGAC
TCTAACGACTTGATTATCAGCTGTGCCTTTTTTCTTCCTGCCTTCTGAGGTGTGTTGCCT
GCATCCTAATTCACGTACTGAGTAGCAAGCTAAGCAGGTTGTAGCTGGAGATTGTAAGAA
ATCCTGAATGGAAACCAAAGAAAGACTGTCACATCACATGATGTGCCCTTTTCAATCCCA

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TGTCTCTTCCCAGTGGCATCCCAGTGCTGTCTCTGCCCCCTGCTGCTTCTGTAAAGATTT
TCTGACACAAGTAACTGCCTCATAGACCTTCCTTTTTATGAAATCCTGAGTTTTGGTTTG
GGTACGTCCTTTTTAGAT
Sequence 71
GCGCGGCTGTCGCGAGGGCGGGGGTCGGGGCTGCAGGCGGGGCAGGGCTGGGTGGGGGCG
CGCGACGCACCTGCCTGCTTCCTGCACGGGTGGNCCCCAAGCACTGCGGGGCCCCAGCCC
AAAGCGGACCTTGA
Sequence 72
CGCCCCGCGTCCGGGCGGCTGGTGGGCGACCGGGCGCATCCTCATTGCATGTGCGGCGGC
CCTACCTCGGCCCTGGCCTGACCCCGGCGGCCCTGCCCGCCCCTCCCTCCAGCATCATGG
CCAGCCCAAGAACCAGGAAGGTTCTTAAAGAAGTCAGGGTGCAGGATGAGAACAACGTTT
GTTTTGAGTGTGGCGCGTTCAATCCTCAGTGGGTCAGTGTGACCTACGGCATCTGGATCT
GCCTGGAGTGCTCGGGGAGACACCGCGGGCTTGGGGTTCACCTCAGCTTTGTGCGCTCTG
TTACTATGGACAAGTGGAAGGACATTGAGCTTGAGAAGATGAAAGCTGGTGGGAATGCTA
AGTTCCGAGAGTTCCTGGAGTCTCAGGAGGATTACCGATCCTTGCTGGTCCTTTGCAGGG
AGAAGTA
Sequence 73
GCCCCGCNTCCGGAAATGTCCGATTTTTTTTTTAATTTAATGAAATTGTTAATGAGGAAAA
ATTTTTAATATAGGTCTTATCTACCACACATCCCCATAGATTTAAGGATTTTAATAGAAA
GTCATGATGTATGTATTTAAGCCACGTTAAAAGAAAAAATATAACTATGGACCGGTATTC
AGTGAATACAGTTTCATGGTTTTTAATTCTTTCAAAGCACATTAAAAATGGTGTGCTGAT
AAACCCCAAGTAAATTAACCCTTTTTCCGTATAAATCCATTTTTTGTTTTGAAGAGGGGA
AATTATATTTATTGNTGTTTACTGAATCCTGGTGTGAAAGCATATCAGATATGTATGAAC
TGCTACTGCTGTACTTCCGATTTACGGACATCATTTTATTGCTATTTGTAGACCGTGATA
ACATGAACATGAGTCCTATTTATGTGGGCCTTCAGTGGATGGGCAGTGCCACTCANGTCT
CTGGGGGTTTCCTCTCTTAATTTTAAAGTAA
Sequence 74
AGTCGCCNCGCGTCCGTGTGTGTTTCTCCTCGGTCCCCAACTCTACCTTCCCCAACCACAGT
TCCTGTCCCCAGATGTCCTGATGCCCACCATGGCAGGGGAGCCCAATAGACTCCCAGGAA
CTTCAAGGAGTGTCCAGCAGTTTCTGGCTATGTGTGACAGGGGTGAAACTTCCCAAGGGG
CCAAGTACACAGGAAGGACTTTGAACTACCAGAGCCTCCCCCATCGCTCCAGAACAGACA
ACTCCTGGGCACCCTGGTCAGAGACCAACCAGCATATTGGGACCAGATTCCTGACTACTC
CAGGGTGCAATCCTCAACTAACCTACACTGCCACACTACCAGAAAGAAGCAAGGGCCTTC
AGGTTCCTCACACTCAGTCCTGGAGTGGATCTTTTTCATTCACCCTNCCACCCTNCCATT
GNTCATCCTGTGTACCCACCATCTAAGCAGTCTTCATGTACCCCTGAGGTCAAGCTTGGA
A
Sequence 75
CCCGCGTCCGGGCTGGCATGGCTCTATATAAGATTGTTGCANAAANTCCCTACTACTTTT
GGTCTGTGATGAGCTTAATTATGCAATCTATATNGGCACAGGATGAAAACCTCTCAAAAA
CAATGTTTCTGCCCCTTGCTGAGAGAATGGTCGAAAAAATGGTGAAAGAGGACAAGATAG
AAGCTGAGGCTGAAGTTGAACTTTATTATATGATCCTGGAACGTTTGGGAAAGTACCAGG
AGGCCTTGGATGTCATCAGAGGGAAATTAGGAGAGAAGTTGACAAGTGAGATTCACAGTC
GGGAAAATAAATGCATGGCTATNTACAANAAGCTGAGCAGGTGGCCAGAGTGCAATGCCC
TTTNCCGGCGCCTCTTACT
Sequence 76
GNTGGAGGGAGCTTTGCTACTCTGCTCTTGGCATGACTCCAGGATTTTTTTCTGGAATCC
AACCTCTGTCCTCTTAGGAGAAGGAACCTGTCCTTGGTTCAGATGGCTGGGCATGAGGAG
GAAAATTTCCATTAGTGTAGAAAAGTGCTGGACAGAATCCGGTTTGGAAAATTACAAATC
CAGTTGGTCAAAATAGGCCATTTCCTATGTGTGACCTATTCGTGGTATGCCAACTGGACT
GCTTCCTAAACAGGACGAGGAAAGTGAGGAATATTTTTATATGAAAGCCTTAGCCTGTCT
GGCACCCATGAAAAAAACTATTTATGCACTCCTACTTTCACCCGTCTTTTTGCATTCTCT

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ATTTGTAGCACAACAGAGTTGAATGCCACAAAACACCCCGTTTATAGTGAGCTGTTTTCA
GTGACCAATATCAGAAGGAGGCTTGCTTCTGGACTAGCCTACTAATTGCCAGCAGCCACC
ATTTTTTCATG
Sequence 77
GGAGAGTGCCTTGCCGGACCCTCAGGACGGAGCTGCTGGGCTGCTACAGTGACCAGGACT
TTCTGGCCAAGCTGCACTGTGTGCGGCAGGCCTTCGAGGGGCTTCTGGAAGACAAGAGTA
ACCAGCTTTTCTTCGGGAAAGTGGGCCGACAGATGGTGACAGGCCTGATGACCAAGGCTG
AGAAGAGCCCCAAAGGCTTCCTGGAGAGCTACGAGGAGATGCTGAGCTATGCCCTGCGGC
CCGAGACCTGGGCCACAACACGGCTGGAGCTGGAGGGCCGAGGGGTGGTATGCATGAGCT
TCTTCGACATCGTGCTGGACTTCATCCTCATGGACGCCTTCGAGGACCTGGAGAACCCTC
CGGCCTCGGTGCTTGCCGTCCTGCGGAACCGCTGGCTGTCANACAGCTTCAAGGAGACGG
CCTTGGCCACTGCTTGCTGGTCGGTCCTGAAAG
Sequence 78
CACGCGTCCGGAGAACGTGATTTCTCAGCCGAATGAGTTTGAACATACCCCACAGGAAGA
TGACTTGGGGTTCAAGGAAGAAGATTTGGCTCCAGATCATGAAGTAGGAAATGCCTCTCT
CAAACCTGAAGGCATCCAGAACTGGGATGACTTATGGGTCCAGAGAGAGGGTCTAGGAAA
GCCTCAGCCTCGGGACAGAGGCCCCCGGCTCCTGGGTGAACCACGCTGGGGCCAGGCTAG
TAGTGATCGGGCCGCTGTGTGTGGTGAGTGTGGCAAAAGCTTCAGGCAGATGTCAGATCT
GGTGAAACACCAGCGGACCCACACAGGGGAGAAACCCTACAAGTGTGGGGTCTGTGGCAA
GGGCTTTGGGGATAGCTCTGC
Sequence 79
CGCGTCCGCAAGAAGATAACCCCAAACTCTTTTCTCAGAGAGTTTGTAGCCTAGTTTGGG
ATAGATAAGATCCACATATTTAGTCATATAAGACTACAGGAGAGTAGAATAGATGCACCA
GATGGTGTCGAATGAAAGTGGTACTTTGTAGACTATAAGTGCTGTAAATTCTAAAGGACA
GGTTACTTTTGCCTGGAGTGGTCAAGAAAGATTTTATTTAAAATAAGGATTTGACGGGCA
GACTTAGCAGTCAAAAGGGAGAAAGCGGGTAAAACAAATGTAAGCCATCATAAGAGTGCA
TGTGGTTTGGAAGCATCAGGGAAAAGACTAGCCAACCTGAAGTAAAAGGTTCGTGCAAAT
TGGGCAATCAATAGCATTAAGTTGGAAACAGCTTGGGGACAGACACATAAGAGGGCCAGA
GTGTGAATAATTTCATCTAATACTTTATAGCACTTGGACATTTACAGAGCACTTTTCTC
Sequence 80
TNCTCTCTGCCCCCCCACATTCGTCCTCTTGATTCTCTGCTTCTCTAGCTCAGCCGCTGA
CCTTCGTGCCTAGCCGCCACTAGTCCTTGACCAGCGTTCTGGCAACTCTTGCCTCCAAGT
TCTTCCAGCTCCAGGCTGAGCCGATGGGGATTCAGTTTTCTGACATCACAGCTNAGTTCT
TGATTTCTGCAGCAAAACCTTCAAGGCTTCCATCACCTCGGCTCTAGAGTCCATCATGCT
CCTCTCCTATGACCTGCTAGGGCTGATCAAACGTTCTGTCTCCTGCCGTGCCCTGCCCTG
CCCTGCCCTGAGCTTCGCTTAGCCTGTTGCAGGCTTTGTGTTTTCCTTCTTGTGCTGTTG
GACCACGCAGCTCCTTCTACCCATAAAACCCCCTTCTCTAGGTCGGTGGAAATCTTGGTC
ATCCTTCCGTGTCTAGNTAAACTGGNCACCTCCTCCACGAAAGCCTTCTAAAAACTCCTT
CTCAGGGGAACTGGTTTTCTTTCT
Sequence 81
CACGCGTCCGCAAAATAGCCCCACATCCNGGCAAAAGGGGCCTTTCCCTTGGCCCAGAAG
AAAAAGGAACAAGTGGAGTGCAGAAGAAAATCTGTACTGAGAGACTTGGGCCTAGCTTGT
CTTCCAGTGAGCCAACCAAGGCTGGTGCTGTCCCATCCAGTCCCTCGACGCCAGCACCAC
CCAGCGCCAAACTTGCCGAGGACTCAGCTCTGCAGGGTGTGCCCTCTCTGGTGGCAGGTG
GAAGTCCACAGACTCTTCAGCCGGTATCCAGCAGTCACGTGGCTAAAGCTCCCAGTCTGA
CCTTCGCTTCCCCCGCCAGTCCTGTCTGCGCATCAGACAGCACTCTCCATGGGTTAGAGA
GCAACTCTCCCCTTTCACCACTGTCCGCTAATTATAGCTCACCTTTATGGGCTGCAGAGC
ACCTCTGCCGCAGCCCAGATATCTTTTCAGAGCAGCGGCAGAGCAAACATAGGCGCTTTC
AGAATACCCTAGTAGTCCTACATAAAATCTGGGTTGCTGGAGATCACTTTTGAAAACCAA
G
Sequence 82

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ACGCGTCCGCACCCCTGTGTCCAATGACATGTGCACCCAGGTCGCCAAGCGGCCTGTGGA
CACCCAGGCCTGTAACCAGCAGCTGTGTGTGGAGTGGGCCTTCTCCAGCTGGGGCCAGTG
CAATGGGCCTTGCATCGGGCCTCACCTAGCTGTGCAACACAGACAAGTCTTCTGCCAGAC
ACGGGATGGCATCACCTTACCATCAGAGCAGTGCAGTGCTCTTCCGAGGCCTGTGAGCAC
CCAGAACTGCTGGTCAGAGGCCTGCAGTGTACACTGGAGAGTCAGCCTGTGGACCCTGTG
CACAGCTACCTGTGGCAACTACGGCTTCCAGTCCCGGCGTGTGGAGTGTGTGCATGCCCG
CACCAACAAGGCAGTGCCTGAGCACCTGTGCTCCTGGGGGCCCCGGCCT
Sequence 83
CCCCGCGTCCGCTCTTACGCATTACTCTATGTCTACTGTTATGGGTGTGTAATTTTATAC
CATAGATGTTTACTCTTTAAACAGACACTTCTAGTCTGTTTTATTTCATGTGTCTGGGAG
CGGATAAAGTGTGAGGTTCAGGGAGAAAGAGAGGTCTGTCTCAATGCCTTGGCACGGCAT
GAAGACAATCTCCCCTCCTTGTCCCCTTTCCCTGCTAGCTCCTGATGACTGACAGATTCA
CAGCAGAACAGAAAGGACTGGGAAGGGATGGAGGTGGGACATCTGGCACTGACCTTCAGG
GGCTGACCCTGTGGGGGAACATCTGCCCTGAAGAGTTGGAGCCTTCATGTGATGACACAG
AGCTGAAGTGTGATATTCGGGAGGGGATAGAGAGTGCTTGGAGGTTTTCTGATTTTGAAG
AATCCCAAGTCAGTC
Sequence 84
GTCCGGCCGCTTCCGGTCTCCCTCCCGGGCCGGCGCTGGCCTGACTGCGGCCCCGGTCCG
TAGCACTCCGCCCTCCGCTTCTCCCGCCCTGTAGCCGCGAAGACTGCTTCAGCCTTTCCC
TGTGCTGCCCCTGCCGCGCGATGGAGACGAGCTCGAGCTGCGAGAGTCTTGGCTCCCAGC
CGGCGGCGGCTCGGCCGCCCAGCGTGGACTCCTTGTCCAGTTAATGTGTTAAGAGCCATT
GACATTTGAAGATCATCAGAAGTGAAGATAAAACATCTCAAAAATTATAATTGCCTCCAC
TTCTCATTCAGAGAATTCAGTGCATACAAAATCAGCTTCTGTTGTATCATCAGATTCCAT
TTCAACTTCTGCCGACAACTTTTCTCCTGATTTGAGGCCCATGCAGTCCAGTTCGGGAGC
TAAGT
Sequence 85
CCGCGTCCGCGTGAGGTGTGGGTGTTCGTTTCTCAGGTAAAACATGGCTAAAAGCTTACG
GAGTAAGGTGGAAAAGAAAGATGCGTGCTGAAAAGAGAAAAAAGAATGCCCCAAAGGAGG
CCAGCAGGCTTAAAAGTATTCTCAAACTAGACGGTGATGTTTTAATGAAAGATGTTCAAG
AGATAGCAACTGTGGTGGTACCCAAACCCAAACATTGCCAAGAGAAAATGCAATGTGAGG
TAAAAGATGAAAAAGATGACATGAAAATGGAGACTGATATTAAGAGAACAAAAAGACTCT
TNTAGACCAGCATGGACNGTCCCAATTTGGNTGAACCCAAAGGCAAANAAAAANGNTTTG
ANGGCAAACCGANNGAAAAAAAAANGGGGAAAACCAACCNAAANCCCTTAAAANGGGCCA
ANGGGGTTTGGCCNCTGNNAATNNTTTNAACCCNTTTGAAAACCCCCCCTGGNNGANACC
NCCCGTAAAAAATNTTCCCCCCNNTTTTTTTTTTT
Sequence 86
CCACCGCCGTCCGAGGAGGGATCACCAAGCCGTGGGCCATGAAAGTCGGGGGGGGGGCACC
GCAAGCTTGAAAGCTTCATCATTGACCTTTCNCAAGAAATTACCGGGGCCAAGGCCGCTT
GTTTCNAAAACCCCCATGGAAACNAAAACGANGGGGAGGCANGGGAGAACCACCCCCTTG
GACTTTTTTTTTNATTTCTTCTTGGACCTACCGAAGGAGGGCACAAATTGCCGGGAAGATT
GCTTGCCTTTCCACCTTGGGACAAGGGGATCCTGGGACTTTTCCGGCCCGGGGGTTCCCNT
TCCCGTTGGCCCGGCAAGGGATTGGGTCNAAACAATTGACCCAAGGGAAGAATCCCCGGG
GACGGTCACAACCGGGGNACCAAAGGNAAAGCTTTTTTGGGANGGGAACCCTTTTTTTTA
ATT
Sequence 87
CCGGGTCCCTCCCTGCGGAGCCGCTGGTCCGGCTGGCGGAGATGTGACCGCGGGCCCGGC
CGGCCTGCCTCAGGCGTCGCGTCAGCTCCCGTGTCCGTGCCCTTAACCCACACCGATGGC
GGGATCCGGCTGCGCCTGGGGCGCGGAGCCGCCGCGTTTTCTGGAGGCCTTCGGGCGGCT
GTGGCAGGTACAGAACCCGCTGGGTAGCGGCTCCTTCCNCTTCGGGGTATTCGGGTTTCG
CTTGTTGGGGAACCCTTGGTTGGCCCCCGGGGCCCTTAAANCAGTTNTTGCCGCCAGAAA
CCACCGGGGGTTGCGGCCTTTGCCGCCNAGTATGNTTTCCGAAAAAAAAAGGGCCGGGGCTTG

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NACAAGTTGCANGGGTCACAAAAACATCGTGAATTTTGATNGGAGTGGTTACAATCCAC
Sequence 88
CGTCCGTTTAATTATAACCTAGATTGTCTGGGCAACGGCAGGAACGGAGTGCCACTGTGG
AGCAGATAACTGCAGTGGTTTTCTAGGAGTGCGGCCAAAGTCGGCATGTGCGTCAACAAA
TGAAGAGAAGGCAAAAAATGCTAAGTTAAAACAGAAGAGACGAAAGATCAAAACAGAACC
AAAGCAGATGCATGAAGATTACTGTTTTCAATGTGGAGATGGTGGAGAGCTGGTCATGTG
TGACAAAAAGACTGTCCCAAAGCATACCACCTCCTATGCCTTAACCTGACTCAGCCACC
ATATGGAAAGTGGGAGTGTCCGTGGCATCAGTGCGATGAGTGCAGCAGTGCAGCTGTTTC
CTTCTGTGAATTCTGTCCACATTCATTTTGTAAAGATCATGAAAAGGGGGCCCTGGTTCC
CTCTGCACTGGAAGGCCCGCCTCTGCTGCTCGGAACATGACCCCATGGCTCCTGTGTCAC
CAGAATACTGGAGCAAGATAAAATGTAA
Sequence 89
NGTCGCCCCGCGTCCGTAAAATGTTAAGTCCCCTAAAAGTGAATAAATTTTAAATACCTA
CTTTTAAAAATACTGTCTTCTAAATTGACATAATTGCTTTTCTTACCAAAAGAAGGAGAG
GTTCCCCTAATTCCTTTTGGGCCATAGATCCGCTTTTAGGATCTGATTAAAGATGTGGAC
TTTCACCGCAGGAAGATACCCATGGGCACACCATTCAAAATGTATCAGATTTCAACGGTT
TTACAAACTCCCCCGGGATTAAGTCAAATGGGTGGATATTACAGCTGTTTTCATCAGATA
TGGTTATTTGTTGACAACCATCAGGACAACAATGTTTATAGATGGAAGGATAACTTCCTG
GTTTTTTTCCACATTGAATGTGGCTAGTTACATATCTCAATTTAAAATAAATTGTGGAAA
GCCAAAAAAGTATGGTCAAGCTAACCTTGGGGTGGCTTTTACCTGATGCCTACAAGCACA
GAAAAATAGTTTTTAA
Sequence 90
CCGCGTCCGATTATGCCAAGAGAAGGTATTACTTTAAGATGTGAAAAATGTAAAATGGAA
AATTACATTACTAAGAAAAACAAAAAAACACAAACTGNNAAATTAGAANTGAAAAAACAT
TGCCACAAATGCAACGCACATACAAGTCATAAAGAAAAAAAATAATTTAAAATGAATAGA
AAATATTTAAGACTTAAGCTTTGAAGAACACAATTTAGATGCAATAATTTCATTTTCTCA
ACAAACAAGATTATGAGTTTCTAATCTTCAAACAAGTGATGGAATAGTGTTTCTTGAAAA
AGAAGAAATCCATTTATTTGTTGATTCAAGATATATAGAAGCTGCTCAAAAAGATGCAAA
AAATGTACAAGTTCATTTATTGACAGCAGCTAATTTAAAAGATTTTGTAAGTAGTAAAAA
TTACTTAAAAATTGGTGTTGAAAAAGAATACTTAACTTTAGCTGATTTTAAAAAACTTCA
AGCTTGATTTCCAAGTGCAGAATTTGTCAAATCAATGCGCAAAAATTAAGACTTATTA
Sequence 91
CCGTTGTCCCATATATCTTGTTCCAGCAGCCATATATCTTGNGGTCTACACGCCTAAAGC
ATGATTTCCCTTGAAGTCTTGGGGTTGNTTAAAGGAGAGTCCCTTCAATATAAAACCTCT
GAAATATTAGTGAGAATGGCTCACTAATGTGAACAATGTTTAAATTATTTATTTATATAT
AGAATTACTGAATATTAGTACTGGGAAAATTTATAGAAATCATCTAGTCTTACCCTTCAT
CTTACATATAAGAAAAATGGTCTTTTCTTCTAATCACATTTACAAAATATGATATAAACC
TTGACCATGAATGTATGAGCCTAATTAGAGAAACAGAAAATCAGCATGTCAGTTTTCCTT
CATTCAAAATAACATAGTCTTTCTAAGCAGTCATTCTGGGAG
Sequence 92
ACCACGCGTCCGCAAGGCCCGCCCCTTACGTACTCGGAGCTCGGATCCCAGTGTGGACCT
GGACTCGAATCCCGTTGCCGACTCGCGCTCTCGGCTTCTGCTCCGGGGCTTCTTCCCTGC
CCGCCCGGGGCCCTGACCGTGGCTTCTTCCCCGGCCTGATCTGCGCAGCCCGGCGGGCGC
CCAGAAGGAGCAGGCGGCGCGGGGGCGCGCTGGGCGGGGGAGGCGTGGCCGGAGCTGCGG
CGGCAAGCGGGCTGGGACTGCTCGGCCGCCTCCTGCCCGGCGAGCAGCTCAGACCATGTC
GCCTGAAGAATGGACGTATCTAGTGGTTCTTCTTATCTCCATCCCCATCGGCTTCCTCTT
TAAGAAAGCCGGTCCTGGGCTGAAGAGATGGGGAGCAGCCCGCTGTGGGCCTGGGGCTCA
CCCTGTTCACCTGTGGCCCCCACACTTTGCATTCTCTGGTCACCATCCTCGGGACCTGGG

Sequence 93
NCGCGTCCGCCAAGATGGCGTCCNTCATGGAAGGGCCGCTGAGCAAATGGACTAACGTGA

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TGAAGGGCTGGCAGTACCGTTGGTTCGTGCTGGACTACAATGCAGGACTGCTCTCCTACT
ACACGTCCAAGGACAAAATGATGAGAGGCTCTCGCAGAGGATGTGTTAGACTCAGAGGAG
CTGTGATTGGTATAGACGATGAGGACGACAGCACCTTCACAATAACTGTTGATCAGAAAA
CCTTCCATTTCCAGGCCCGTGATGCTGNTGAGCGAGAGAAGNGGA
Sequence 94

ACGCGTCCGCGGACGCGTGGGTGCGGGCCGGCCNCCCTGGACGAAAGAAGAGGGCCCCTC
CAGGCCAGTCTGGGCACCCTGGGATAGCGGCTGCAGCCAGGCATGGCCGACTCTGCACAG
GCCCAGAAGCTGGTGTACCTGGTCACAGGGGGCTGTGGCTTCCTGGGAGAGCACGTGGTG
CGAATGCTGCTGCAGCGGGAGCCCCGGCTCGGGGAGCTGCGGGTCTTTGACCAACACCTG
GGTCCCTGGCTGGAGGAGCTGAAGACAGGGCCTGTGAGGGTGACTGCCATCCAGGGGGAC
GTGACCCAGGCCCATGAGGTGGCAGCAGCTGTGGCCGGAGCC
Sequence 95

CCCCGCGTCCGAGGTGACCTCCTTGGCCCAGATCATCTTAGAGCCAAGAAGCAGGACCAT
TCGTGGTTTTGAGGCCCTGATTGAAAGAGAGTGGCTGCAGGCTGGTCACCCATTCCAGCA
GCGCTGTGCACAGTCAGCCTACTGTAACACCAAGCAGAAGTGGGAGGCTCCTGTATTTCT
TCTCTTCTTGGACTGCGTGTGGCAGATCCTTCGTCAGTTTCCCTGTTCTTTTGAGTTTAA
TGAGAATTTCCTCATCATGCTCTTTGAGCATGCTTATGCCTCACAGTTTGGAACATTTCT
GGGCAACAATGAAAGTGAAAGATGTAAGTTGAAGCTACAGCAGAAGACGATGTCTTTGTG
GTCCTGGGTTAATCAGCCCAGTGAGCTGAGTAAATTCACCAATCCCCTCTTTGAAGCCAA
CAACCTTGTCATCTGGCCTTCAGTTGCTCCGCAGAGTCTTCCACTGTGGGAAGGTATTTT
CCTACGTTGGAATAGATCCTCTAAGTATTTGGATGAAGCATATGAAGAAATGGTTAACAT
CATTGAATATAATAAAGAATT
Sequence 96

CCGCGTCCGGTTTNCCTGTTGGTTAGGCTGGTCTTGAACTCCTGACCTCACGATCTACCC
ACCTTGGCCTCCCAAAGTGCTGGGATTACAGGCCTGAGCCACTGCACCAGGCCCACCCTG
TCTCTATTTTCTAAAATAATAAATCTGATTTTAATGTGGCTGGATATAAATCATATCACA
GTTGGATTTGGAAGTTTGGGTTTTATTCCTAACTTTGATGGGAAGCCATTTTAAGCAGAA
AGATGATTTTAAAAGACCACTATATTTTCTGTGTGAAGAATGAACTGGGAGATTTCATAG
TATTATTAACAAAAATAGAATAGTTGGGGATCTGGTTTGGCTTGGGAAATGGAGGAAGTT
CAACTTTGGGCATGCTCCATTTGCATTGCCAAGACATTGCAGCAATTGGAAGTGCAGTCA
GAGAGCTTAGGAGAAACACTTGGCAGATGGACATAGAGAAGTAGTACTCAAAGCTTGTGG
ACATTGATTAAATAATCATACAGGAGTATGGGCTGACAAAGATTNCAAAGAGAAAACCT
Sequence 97

GTCNCCACGCGTCCGGGACTCTCGGCCCTGGAGAAGGAGGTGGACTTTGACTCCGACCCC
ATGGAGGAGTGCCTGCGGATCTTCAACGAGTCCACCAGCGTCAAGACGGAGGACAGAGGC
CGGCTGGCCCGGCAGCCCCCCAAGGAAAAGAGTGAGGAGAAGGGGCTTTCGGGTCTGACC
ACTCTGTTCCCCGGGCAGAAGAGGAGGATCTCCCACCTTTCCAAGCAAGGCCAGGAGGTG
GAGCCCCGAGGAGGGGTCCCGCGGTGCCCCCGGCCCGGCCCCCGACGGCGCAGGAGGTG
TGCTACCTGCGGGCCCAGCAGGCGCAGAGGGCATCGGCGAGCTTGCTGCAGGCCCCCGCC
AGGCTGGCAGAGAAGTCGCCCTNCGTCCACATTTCCCGCCCCTGGCGAGAA
Sequence 98

CGCCNCGCGTCCGGCAAAGCAAAAGGGAAATTATTTGGTGGATGGTAGCTCAAAATTGGA
ACTCTTGTTCTAATTCAGTTACATTGGCTTTACCCTCCTTAGATTTTTCATCAAAGGGCT
GTCCCATTGCAATCTTACTAAAACATTTTGTTAAAATAAACTCTTTTCCTTTTTATATTA
ATAATTAGGCTTTTAAATAAAGATGTTATTCCTTTAAAATGGTGGGCTTACCATCATTGA
AGATGTCACTCAGGTGGCCTTGCTTGATCAAAACGCCTTTTTTAAAAACCAAGCTTTAAA
AACATGTTTATAATTTCATGAAGTACATATATATTGTTCCCATAGTCTTCAGCTTTAAAA
CTATAAATATGCCCAAATTTTGTTATTTGCCCTACTTTAAGTAGGTTTATTGNGTTTGTT
TTTTTCAAGTACTTGTTTTTTCTCTGATAAGACTCAGGAATTCTGAAATGTGAAAATGNCT
CAATT
Sequence 99

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CNCGCGTCCGAAATCGTTGCTACCAANTATTCAAAACCCTTTGAGTTTACATACTAGTTA
CCTTAAAAATTANTNCCTGACNCTCNTGANTTTGGGNGGAAAGCCCTTGTNTCNNCTCTC
TNATGNACTCTCATGGGTTTTTTTTGTATGATTTGAATATNAATGTGCCTAAAGAATTTTT
GCTCTCTTAATCTATGNATACATACTTGAACAAATCATTCTTGCTTAACTGCTGATCTTT
TGTAAAACTATTG
Sequence 100

GCCCCGCGTCCGGCTGGAAGCAACAGTTTGGCAGCCTGGGGTACACTCAGGTTATTCGTT
ACAACTATTATTATTTGATGTCTTTTTTTAAACTCAGGTCATCCACTTTTGACTGTCATC
CATGGAAGAGCTCTTATTAAAAGCCTCAGACTTTCGGGACCTATGATTCTTTGGCACAAC
CTTTTGGAAAATTCTTAAGCAGGGATGAAGCAAACTTGATTGGAGTTGGGGAAAAAGAAG
ACAGATTAGTATTTTTCATGCTGACAAAAAATAGCTGCTATGACTTTTCCCGCAACGTGG
ACAGGGGCCAAGTGAAGCTGAACTGGTCATGGTCTGTCGCCCAGTGTTCCCTTGTCGTCG
GCGATTTTGCCCCCGACCCTTCTTGGTGGGCTTAGTGGTGGCAATCTGTCTCTTCTACCA
GACTCTGACCCTCCGAGGGTCGAGGAAGCTCACAGCCGCTGCCCCTGGGGCTGTCCCACA
CACATCCACTGAAA
Sequence 101

CCACGCGTCCGGGCGTCTCGGCTCTTCTGTATCTCCCTGGCCTGGTCGCTCTCGGCTTCT
GGGCCTCGCCCTTCCTGTCTGTGAAATGGACTCTGGGTGAATCCAAATGGGATCGTCTCG
GGCTACGTCCTGTCCCTCCGGGACTACAAGTCCCAAGGTGCTCGAGGCGACCTTGGCTCC
CCCTCCCCACCGGGACCCGCCTCCCTCCAGCCCAAGTCACGTCGTCTAACCTGTTCCCAG
CTCCTGCCCCGCCCCGTTCTCCGCTCCCCAAGCCGGAGCCCGAGCTGGAGGAAGCCCCCA
GGTGCCAGGATCTGCTCGGATCCGNGCCCGCTCCGGCCGGCACCATGGACAGTGAGGCAT
TCCAGAGCGCGCGGGACTTTNTGGACATGAACTTTCAGTCGCTGGCCATGAAACACATGG
ATCTGAAGCAGATG
Sequence 102

CCACGCGTCCGGTCCGGGGGTGGAATCACGTCGCTGCGGCTGCCGACGACCCACACCCGGC
CGGCCGCCTCCGCAGACCCACCTTGGCCGCGCGGCAGGGGGCGCGCAGAGCCCCGAGGGA
GCGAGTCCCCGCGCGTGGCAGCTCGGCGGCTTCTCCCTTCGGGAGGTCCGGCTCCCGGCT
CTCCGGACCCGCCTGGCGTCCTCGCCTGCGGCGGGGCGGACGACAGCGGCGCCCAGGAAT
GGCTTCGGCGGGCAGCGGCATGGAGGAGGTGCGCGTGTCGGTGCTGACCCCCTTGAAGCT
GGTCGGGCTGGTGTGCATCTTCCTGGCGCTGTGTCTGGACCTGGGGGCGGTGCTGAGCCC
GGCCTGGGTCACAGCTGACCACCAGTACTACCTTGTCGTTGTGGGGAGTCCTGCCGGAAA
CCCGCCAGCTTGGACATCTGGCACTGTCGAGTCCACGCTCANCAANCGATTGGCAGATTG
C
Sequence 103

NCGCGTCCGAGAAATTGCAATTTTTTTAATTTTTAATTTTAAGAGGAATTCGTGCCAGAGA
GAACTATTAAGAAAGGGGTATATCCAGTCTAAGGATTATTAGGCTCAAGTCCATGAATAG
GCTCTGGGAAGTTTGTAAACACTTGGAAATTATTTGCAAAATGTGTGTGTGAATGTGCTT
TACCTTANAGAGTTCATGAATTTCATTAGATTGTTGAAAGAGTTTTAGTATTAACAAAGG
AAAAACAAACCACCACCATCACATAACAAAACCACAACAGTGATTTAATCTTTTCACCTA
ACAATAAGTAAATTGAGGCTCTGATGGCTAAATTAATAGCCTGAGGCTACACAGTCAGTG
GCAGAGCCCAGGGTANAGAGAGAACCAGCACAAGCCATTGTGGGAGCCGAGGGTAAAGAG
AGAGCTAGGTGTTGTACCTTAGTAAATAAATCAGAA
Sequence 104

GNGTCGCCCCGCGTCCGGAAGGTGGAGACCGCTTACCCTGATCNGGGATGTATCGGCTGC
GGGTGCGCAAGGCAGTCCAGGAGTGACCTGGGGCTGTGGAGAGCGACCCGTGGCCTTGTG
TTTCAGAGTTTACCACCTAGGATGACTTCAGTGACTAGATCAGAGATCATAGATGAAAAA
GGACCAGTGATGTCTAAGACTCATGATCATCAATTGGAATCAAGTCTCAGTCCTGTGGAA
GTGTTTGCTAAAACATCTGCCTCCCTGGAGATGAATCAAGGCGTTTCAGAGGAAAGAATT
CACCTTGGCTCTAGCCCTAAAAAAGGGGGAAATTGTGATCTCAGCCACCAGGAAAGACTT
CAGTCCGAAGTCCCTTCATTTGTCTCCTCAAGAACAATCTGCCAGTTATCAAGACAGGAG

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GCAATCCTGGCGGCGAGCAAGTATGAAAGAAACGAACCGGCGGAAGTCGCTGCATCCCAT
TCA
Sequence 105
CGTCCGCGCAGCGCTTGAATCCCGTGGCCTAACCGTCCCTCGGAAGACCGGTCCCGCTCG
GGAGGCTCTGCAGTCGCGCCTGGGGTCAGGGCCGGGGGCGAATGTGGCTCGCGTTCTAGG
CCTCCCTGGGTTGGAAAAAGACTATGTTAGCAANGTGTCACGCCATGCTTTTGCCAACTT
TCCAATTAAAGGTTGACATTCCTGCATAAGCATTTCTCTGTGAAAATGTCCTTGCCTCTT
ACAGAGGAGCAGAGGAAAAAGATTGAAGAGAATCGACAAAAGGCTCTGGCCCGCAGAGCT
GAGAAGTTATTGGCAGAACAGCATCAGAGGACTAGCTCGGGCACCTCCATTGCTGGCAAC
CCATTCCAGGCCAAGCAAGGCCCATCCCAAAATTTCCCAAGGGGAGTCTTGTAAGGCCAA
GTGAGCCATTGGTGTCATTTTCAAGCAACAGAATCTCAGTAGCTCATCTAATGCTGACCA
AAGACCTCATGATTCCACAGTTTTCANGCAANGGGAATATGGAAA
Sequence 106
CCGGCCCTATCCCTATATTGTTTGCTTGTTTGGGATAACCTAAAATTTTTTATCCAGTTT
ACTACTAATTTGTTTTACCTGATGTATCTTCTCTTTCAATAATTTTATGTTACCTTCTGT
TTAGAATAATATTTGCCACAGATATTTAGGTTTAATTCTGTGTTTGAATGATTCCAATGC
CTTTCTCTACCCACTTTGAACACTTCATCCTGGAATGGTTGGCTGATGTATGTCTCTAAA
CAATTTTTTTTTTAGGAGAAGGTATGTGGGTAATGTAATTCCTAAACCTTTGCTTTTCTG
AAAAATCTTTCATTTGCCTTTATACATGACCAGATTTACTGGGTATATAGATTTGTTGAT
GAAAAAAGGTAAAAAGAGCAACTTTTGACATCCAGAGGTTTGTCTGGCACTCACAGCTAG
CCCCGTGTTATTCTCCCTATT
Sequence 107
GCGTCCGTCTNAACCCTAAAGCTAAAAAGTCATTGTGAACCTTTNGGTCTGATGCTAAAG
AAGGGAAAACAGGTACAGGAAATCCCATGTGGATGCTTGCTTNCAGGATTTCCTGCCATG
ATTCCAGAATCCCACAGCTNCAACATGATTGCAAAAAGACTCCCTGCTCATTTTNCCTCA
GCATGCACAGCGCTGTCCTGTCTCAGTTGCAACTCGACAGAGCCGCATTTACTCCAGAAC
CCAATCCACACACCTGCTCATCCTGCCCCGAGAGGAGTGCCTGAAGCCAATAGCAGGGAA
CTAGAGCAGACTTGGGTGGATCTTCATTGGATATTAGGTATCTTGCCCTAGATAGGCAAG
CAGTGGCCTTACAGATGCTGACAGATGATCTGATTAGATGCACAGNTGCTGGGTGGCGTC
TGGGGCCAGTCTATTGGNCAGTTCTGGGAGNGGGAACTATTTGGGCTCTGCAAAGATG
Sequence 108
CGTCCGCTCCCTGGCCCTGCTCCGGGAGCTGTCGTTGTCTCCGCCAGCAGCCCTGTGGCT
GCAGGAGCGCCAGGCCCAGCTTCGCCACTCGCTGCCCCTGCAGAGCTTCCTGCTGAAACC
TGTCCAGCGCATTCTCAAGTACCATCTGCTGCTGCAGGAACTAGGGAAGCACTGGGCGGA
GGGCCCAGGCACTGGGGGTCGCGAGATGGTGGAGGAAGCTATTGTGTCCATGACAGCGGT
TGCCTGGTACATCAACGACATGAAGCGCAAGCAGGAGCATGCAGCGCGCCTCCAGGAAGT
GCAGCGGCGGCTGGGTGGCTGGACCGGACCAGAGCTCAGTGCTTTTGGGGAACTGGTGTT
GGAGGGCCGCGTTCCGAGGAGGCGGANGGGNGGGTTGGCCCCCGGCTACAAGGGGGT
Sequence 109
AGAATTGTGTATGCCTTGCCTATCACGGTACAGCACGAAGCCAGGCTCCTTTCTCCACCA
AAGAAGATGGAACCAGACTGGAATTCTGTCTCCAGAGAGAAACCCAGCTGTTTGGGTCAA
AGACAGATGCTTCAGACTTGGGTGGGAAGGTGAAAGATGGCTATTTAGAAAGCTGGTGGC
ACGTTTTACATAAGGGAATGTCAGATGGGAGATGCTAGTTGCCATTTTAACAAAGCAGGT
AAATCGGTAAATTTTAAACTCTGTCCATGTTCTGTTAGAACTCAGGGACAAGGGATCCAT
GAAAAAG
Sequence 110
ACGCGTCCGCACGGAGAGAACTGGNCCTGGAGCGGGGGCGCGGGGAGGGGGGCGTCGTCN
TGGGTACAATTGCGCANGGGCAAAGGTCGAGAGGTCGCGCTGNCGCCGTTTTATTTGAAG
ACATCGTCCAGTTCTGACCATGGACTCNCAGCCATCGGCCCTTAGTTTCCATTCCCTCTA
GNGGGCCTTCNGAGGGNTCTACTGACGTACCTCCTTCCCTTGGTACCGGACCGGGGAAGT
GTTTTCGGGCGCGGGAGGTTCCGCATGCCCAGGCCTGGCCAGGGGA

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Sequence 111
CGGGCCCTTAGTCCAAGCCTTGATCGGCGACTAAGTGACGGCAGTGACTGCCGCCATGCC
GAGCTGGACGGAAGNCACTTCTGAGAAGGGCGGAAGTGTCTCGGGCTCCTTAGAGGGAGG
ACACCATATTAGTGCCAGTGGGGAAGTCACCGGGTGGAATTACTTCTTTGTGGAGTTTGT
GCTGTAGCGACAATGAAAAACGAAGAGTCAACTTTTATAAAACAAAATAAAAATTAAGTC
AAATCATGCCAACCTTTATTAGATCGGCTAGCAGGGTTAAACTTAATTCAAAGCCCCTGA
TGAATCGGGCCTTCATTGCACCCCCAAAGGCTCCGCCACCCTGATT
Sequence 112
CGCGTCCGGGCGCCGGTACGCCTGGTCCCCGCGTGGAGTCTTTACTCAAAACAGCTCCCG
CCTCAGGCCGAGATGAGGAGCCCTTCANAATAGCTGCTGTCTCTGGGNGGACCCGGGCGT
CCTTGGCAGCCCAGCTGNTCTGGACAAAGCCCTGCCAGTCAGGCCTCCGCTGGCAGGAAC
CATGGCAGAGGCTGGGGATGCTGCGCTATCGGTGGCCGAGTGGCTGCGGGCATTGCACCT
GGAGCAGTACACGGGGCTCTTTGAGCAGCATGGCCTGGTGTGGGCCACTGAGTGCCAAGG
CCTCAGCGACACCCGCCTGATGGACATGGGCATGCTACTCCCT
Sequence 113
TGTCGACCCCGCGTCCGCGGGANGTTCATGGAAACGCAGGACACGACAGAATTGTGTNTG
CCTTGCCTATCACGGTACAGCACGAAGCCAGGCTCCTTTCTCCACCAAAGAAGATGGAAC
CAGACTGGAATTCTGNCTCCAGAGAGAAACCCAGCTGTTTGGGTCAAAGACAGATGCTTC
AGACTTGGGTGGGAAGGTGAAAGATGGNTATTTAGAAAGCTGGTGGCACGTTTTACATAN
GGGAATGTCAGATGGGAGATGCTNGTTGCCATTTTAACAAAGCAGGTNAATCGGTNAATT
TTAAACTCTGTCCATGTTCTGTTAGAACTCATGGACAAGGATCCATGAAAAAGACCTGTG
ATGTTTCNTCTGGCGCTTTACTGGCCTGGGCACACCTACCAATCTTTTAGGATTTGACTG
GTTCCATTACATTTCCT
Sequence 114 ·
GTCGACCCCGCGTCCGTATCACTGTAATTTAAGGAAAGAAAACTTCAGTTCTGCCTCTGG
ATACCAAGATGCCCATTGCTCAGTTCAGACAACTGATATTAAAATAAAGCTATGCTCCTT
ACTTACTTCTTTTATTATAAACAAATTCCTTTGCTTTGGCTGATACTAGCTGAGTCATTG
ATCATCATTGGTACCATGATATTGTAATCTATGCTGCTATTTGGCACAAGACTGAAGTTC
ACACTACAGTAGAGAATACTATAAGATAATTTGCAATAAATACTGATAATAATAATACCA
GATATTTTAACTAACTTTTTCTACCTTTATTAATAGCAATCAGCACACTTGAATGTGTAA
ATTTCACAGTAACTTTAGGCAGAACTTAAGCTCCAGGCCACATTTGTATAAGAACACCAA
GTATTCAAGGCATAAAGTCTGTTGTAAGCCAAAAAAA
Sequence 115
AGTTCAGTCTGCAGCAGTCCCTGCACCCACTTCCCAGTTGCTTTCATCTNTGGAAAAAGA
TGAGCCCCGTAAAAGTTTTGGCATCAAGGTCCAGAATCTTCCAGTACGCTCTACAGATAC
AAGCCTTAAAGATGGCCTTTTCCATGAATTTAAGAAATTTGGAAAAGTAACTTCAGTGCA
GATACATGGAACTTCAGAAGAGAGGTATGGTCTGGTATTCTTTCGGCAGCAAGAGGACCA
AGAAAAAGCCTTGACTGCATCAAAAGGAAAACTTTTCTTTGGCATGCAGATTGAAGTAAC
AGCATGGATAGGTCCAGAAACAGGAAAGTGAAAATGAATTTCGCCCCTTGGATGAAAGGA
TAGATGAATTTCACCCCAAAGCAACAAGAACTCTNTTTATTGGCAACCTTGAAAAAACC
Sequence 116
CCCGCGTCCGCACCAGGCCCGAGTCTTCCCTTCATGGAGGGTGACGTGAGCAGCAAGGAT
AAGATGGGCAAAGGAGTGGATGGGACATATAAAAAAGCTCTTCAGGAAGCTGCAGCAAGG
TTTGAGGAATTAAAGGCCCAAAAAGAGCTAAGACAGCTGCAGGAAGACCGAAAGAATGAC
AAGAAGCCACCACCTTATAAACATATAAAGGGTCTCCCTCTGTGACCCAGGCTAGAGTGC
ATTGCTGCAATTTTGGCTCACTGCAACCTCCGCTTCGTGGGCGCAAGTGATTCTCCTGCC
TCCTGCCTCAGTCTCCTAAGTAGCTGGGATTACAGACATGAGCCACCAACGCCTGGCTAA
TTTTGTGATTGGCAAAAAGAGATTTTGTGACACATAAAGATGATATGAAATTCAACTTT
CAATCAAGTATCCAGAAAATTTTA
Sequence 117
CCACGCGTCCGGCCCTTGCCCCTGTCNCACANGAATGGACCCACGGCCCCACCCAGCGCC

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GTCAGCGCCCGGCACTGCCACCCGGGTCCGGGCCGCTGCCTGCACGTGGGATCCGTCGGG
CAGCCGGGGACAGAAGAGACCCCGCCGTTGGGACGCAGGGCAGAGCCGGCCACCTAGTCC
CTTCCAGCCAGCAGAGGCGAGGGAAGGCGTCACTGCCCCGGCGGGGAGACGGGCAGGACG
CCCTGCCCCGCACCAGCAGCCTCCGCCGGGGCGCCCTCAGCTCCCTGCTTGGCTCTGTCT
CTCCACACCCGGCAGGGCCCGCGGGCTGCCCCAGCCTGGGGGGGTCGTGGGCAGCTGCTA
CTCAGTGCCAACCCCGTGGGGCACAGA
Sequence 118
NAGGGAGTCGACCACGCGTCCGGTGCGGAGCAAGCATCACACCATGGCGTATGAGTGTTC
CTCTGTGTAGACTCAACCTGCGCCTCGCCGTCCCCCATTCGCACACCCGATGCCCGGGGG
TCGCTACGGACTTAAAATCTCCGCACCGCACCCTCCACCTCAGAAACGTTCCTGGATCCG
AACACTGCCCCCTGACGACCTAGAGAGATCCCGGCTCCCAGCCCACTGAGTGGCTTCAGC
CTCGCTGGTAGGTCTCTCCTCCAAAGCTCTGGAAACAGACTCCTGGGAGTGANGGTAGNG
GGGGAGCNGCAGGCACCGCCCCCTTTCCCCAAGTCCNCCGCCCACTTCATCCCTCAGGCA
CCTNCCAACTCCTGGCCTTNTCTGCACGAGGCGCCTGCCCCGGGCCCCGCCTACAGGGGA
CCCAGCTCTTCTTGCAGCCATTGGAAGNTGATCACCTGGGAGGTGA
Sequence 119
CACGCGTCCGGTTTTACTGCTCTTTGCCATGTGGTAAAAAGAGGCTGAGACATATTTAAG
AATTCCAAGAGGATATTATGTGTCAGAATTTCAGACACTGATGAGAAGTTTTTAATTGTT
CTTTTTTATTTGATTTTGGAATTCAGGTGCACTCTATTCAAGTGCAAGGATATCAGAAGT
TTTTTTTTATTTAAAAAATTTTTTTTTTCGAGATGGAGTTTCACTCTGTTGCCCAGGCTGG
AGTGCAATGGCAGCTTACTGCAACCTCCACCTCCTGGTTCAAGCGATTCTCCTGCCTCAG
CCTCCCCAAGTAGCTGGGGATTACAGGCACCGCGCCAACACACCTGGGCTTATTCTAATT
TAAGTAAGAAAATGGGAAGTCTTACCCATNTTTGGTCAAGGCTTGGGTCTTCGAACCTNC
TGACCTTAANGGTGATNCCACCCCANCTTTGGCCTCCCAAGCCGTGCTNGGGATTATAGG
GCATGAAGCCCACCCANGCCCGGNCCCAGGATTTTTATATTTAAGCCCTTCTTGCTCTTN
AAAAAAAAAAAAAGGT
Sequence 120
NGTCGCCNCGCGTCCGGGAACCTACCGGTACCGGCCGCGCGCTGGTAAGTCGCCGGTGTG
GCTGCACCTCACCAATCCCGTGCGCCGCGGCTGGGCCGTCGGAGAGTGCGTGTGCTTCTC
TCCTGCACGCGGTGCTTGGGCTCGGCCAGGCGGGGTCCGCCGCCAGGGTTTGAGGATGGG
GGAGTAGCTACAGGAAGCGACCCCGCGATGGCAAGGTATATTTTTGTGGAATGAAAAGGA
AGTATTAGAAATGAGCTGAAGACCATTCACAGATTAATATTTTTGGGGACAGATTTGTGA
TGCTTGATTCACCCTTGAAGTAATGTAGACAGAAGTTCTCAAATTTGCATATTACATCAA
CTGGAACCAGCCAGTGAATCTTAAATGNTCACTTAAATCAGAACTTTGCCNTTAANAAAG
AAAATTGGGGNGTCCTGGGTTTA
Sequence 121
CCNCCCCGCGTCCGATCAATTCCTGGAATTTATGGTTATAACTTCGAAACAGAAGATGGA
CTAATTTTATTTTTATCTAATTTTATTGTTGGAAATTTAGGAATTTACGGAAATACTAAT
TTAAATTATTTAAAAAGATCATTAGAATCAAGTAAACCAATTTTGATGGCTATGATTGAC
TCAACAAGAGCTAATTATCCAGGTAAAACAATAGATAAAATTTTTGCTAAAAAGTTTTTA
GAAAAAACATTTTTAACAACAAATCCACTTCAAGAATAATTGTCGGAGCATACGATGAA
GAGATGCTTTCAATTCAAGAAATCCTTGATTTAGCTTACAAATCAAACGTAAAGGTTGCT
GTATATGGNAGAAATTATGACAATCTTTTAGAAATGAATCAACGATTAGCACAAAAACAA
AATCTTGAAATACATTATCCAGAATTTTTTTGATTTCAGGCAAGCTAATAAAATCGATAAT
TTTGTAATCTTAATTACATCAACACCTGGAGCGAATTTACCAAAGATTTTTTAGAAT
Sequence 122
CGCGTCCGCGAAACTGAGAACCAGTTCTCCCGAAGCCGCGGGTCTCCGGCCGGCGGCGGC
GGCGGCGGCGCAGGTGAGCAGGGCAGGGGGCAGCCGAGGGAGCGCGGGGAGCGGGGGCCG
GGGGGCCACGTACGAGGGGCTGCAGGCCCAGCCGGGGCGGGACTCGCCAATCCTGCGTCC
CCAGCTCAGGACGCGGACGCTGATCCGAAGCCCCTGGCCCCGGCTGGGTCAGCACTGGGA
GAGCAGGCCCAGGTCCGCAGCCCGGGTGTGGGGCCCTCCCCAAATCCAGGGAAAGGATCG

TABLE 1
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TGGAGCGGGGTGGGGACTGAAAGCCATTTCCTTTCCCGTGAAGAATTTTTATCAGTGCAA
GTAACAAAATATT
Sequence 123
CGCGTCCGCTNAAAAAAATAATACCAAAAAAAGTTTTTGTAAAGACAACGCTCTCGCTGT
GTTGCCCCGCCACTGTGGCCTCCTTAGCTTCTTCCCTGGGGCCTGCTGGACCTTTCCATA
CTCCAGAAACTAAAGGGGGTCCAGGACCCTGCTTNAACCCTAGGATCCCGCATCTTTTTT
TTTTTTTTTTTTTGGACGCAGGGTCTTGCTGTGTCCCTCAGGCTGGAGTGCAGTGATTCACT
GCAGCCTCAAACTCGTGGGCTNAAGTGATTTCTTTAGCCTCAGCCTTNTAAGTAGCTGGG
GACTACAGTCATACACCAACATGCCCAGCTAANTTTCCTTTTTTTTAATTCTTGTAGAGNA
TGTTTGAGACGGCTTGGGCTNTGTTGCC
Sequence 124
CCNCGCGTCCGTGCTGATAAAACTCCTTTGACCTGACGATTGCTCTAAGTCCTAATTGCC
ATATTTATATTCCCATAGTAAGAGTGTTTGGAGATAGTGTTTGAGCTTTTTTGCTGGTGT
TAAAAATGCATAATGAAAGATGGCACNAGAGAGGCATATTATATCCAATTCATGAAGTTG
TTTGTGTTAACAGAAAGCTTATTTTAATCACTTAACATTGTTGATTTGTCTAATCACAGT
AGCGCTATTGATTAGGAGCCTGACCTTTANATGGTTGACTTGTGAGTGTATTCAATATGG
TGAAATAANGGTGTTTGATATATGGCTGCAGATTTTAGAAGGTGTCATTAGCAAAGGTAT
ACGGAATAAAATANGGGTTATAGTATTCCTTACTCAAATTCTGTATGTGCTAGAGCTGGC
TGGAGTCTGTTGGCATGCTCATTTGGTGTAAGGNCCGNTAAGGACTATGCT
Sequence 125
GCCCCGCGTCCGCACTTTGTATTGATAACTTAAAATGGCATCAGTTTATCTTAGACATCA
GCTTGCTTTTTATCTCCTTTTTTTAGTGAGTGAAATAGAGCAACTAGCATGCCTGTGTTCC
CAGCTACTTGGGAGGCTAAGGTGGGAAGATCAATTGAACCTAGGAGGTTGAGGCTATAGT
GAGCTGTGATTGCACGACTGCACTCCAGCCTGGGCAATGGAGTGAGACTCCTGTCTCTAA
AACAGCAACAACAAAAATAAAGCAACCATAGTGCATAAGGGAAATTAAATGTTCCCTATA
GAAATATGTGTATGTCTGTGATAAGTGGTATGCAAATGCTAATTATTTTATAAAATAAAA
GTTCAGAACTATTCTTATCATTGCCACTTGAACAATTAAAGGGTTTGCTTTATTTCCTAA
TGTTTAATAGGAACCCTTTGCTTCAAACAGCCTTTGTTGAAATCATGTAAAAATTTGTTA
ATAG
Sequence 126
CNCCACGCGTCCGGCGGCCCAGCCGCCGCCTCCCGTTCTCCCCTCCGCAGCGGCGGCGGT
GGCGGAGAAGGAACTCGACACGCACCGACCGCCCTCCCGCCCCAGCCGAAGCGGAAGCTG
TAGCCCGCTCTGGGCCGGGGCCATGGGCGCCCCGCGCCGCCCGGGTCATGAGGACGGAGG
CGGAGGCAGCGGGGCCGCCGCTCGAGCCCGGGGACTTTGTGCAACTGCCTGTGCCCGTCA
TCCAGCAGCTCTACCACTGGGACTGTGGCCTGGCCTGCTCCAGGATGGTGCTGCGGTACC
TGGGCCAGCTGGACGACAGTGAGTTTGAGAGAGCCCTGCAGAAGCTGCAGCTGACCAGGA
GCATCTGGACCATCGACCTGGCCTACCTGATGCACCACTTTTGGCGTGAGGCACCGCTTC
TGTCCCAGACCTGGGGTGTNGACAAGGGCTACAAGAACCAGTCCTTCTACAGGAAGCACT
TT
Sequence 127
CNCGCGTCCGCGGTCGCGTGGGCGGACGCGNGGGTTCGTCCTGGACAAGTCTGGGAGTGT
GGCAAATAACTGGATTGAAATTTATAATTTCGGNNAGCANCNGGGCGGAGAGATTCNGTG
AGCCCTGAAATGAGATTATCTTTCATTGTGTTTTCTTCTCAAGCAACTATTATTTTGCCA
TTAACTGGAGACAGAGGCAAAATCAGTCAAGGCTTGGAGGATTTAAAACGTGTTANTCCA
GTAGGAGAGACATATATCCATGAAGGACTAAAGCTAGCGAATGAACAAATTCAGAAAGCA
GGAGGCTTGAAAACCTCCAGTATCATAATTGCTCTGNCAGATTGGCAAGTTTGGACGGTC
T
Sequence 128
GGAGTCACCNCGCGTCCGCCCCGCGTCCGCCCCGCGTCCGGTTAATCTTAGGCCTGAGGT
TTGGGGCCGGGTGACAAGGAAGTTAAACTCGTCCTCCCTGCCAGATTCTACCCCCTTTCG
GAGCTGAGCTCCAGCCAAACCTGTGGAGTTTTCTTTGACCATTTTAGGACATGTTACTGC

TABLE 1
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TTCTGAGTTGGCTGCCCCAGCTGCTCAAACAAGACCTTTCTCCTGGGTTCCTAGTAGTGA
AAAGGAGCAGCAGAGCAACTGAGGAGGAGGGCGGGTGGGAGGCATGGGACTGGGGCTTGG
GGAGGTCAGGCGAGACCGGGGTGAGAGCTCAGAGAAGCTCCTGTGACTTCCATGCTAAGA
TCTTGCCAGAGAACTCTGGTCAGTCCTCGGGTGTCTGGATGAAGTAAAGGAGTTAGGCAT
TTCTTCCTTTGATTCTCTGGCTTACCT
Sequence 129
CGTCCGGCCCGCTCCGGGCGTGGGCGTGTTCTCGGCGGGCGTGCCTGGAGGAGGAGCTGG
GTCCTTGTGCGGCTGCAGAGTCAGATGGGGCGGGGATTTCGGGGCACCGGGTCCTCACCT
TCACGAGAAAGGCCCCACAGCACGTCCCCACTACCCGACGACTCACTCTTCGTGGCTTCT
CTCTCCTCCCCAAGAGCAGGGGTGGGCCTGTCTCGCGTTCCCCTGCGGGAGTCAGGAAGC
GTCCTTCCTACCTACCAGTCCTCCCCTCTGGTGTCTGGGGACACTTCCTGGGGGCCTTTC
AGGTGGTTGGCGCCGGTGCAGGGCCTGAGAGCCTGGG
Sequence 130
GCGTCCGGTGGCATCATGACTTCTGGGGCAGTAGACTGAGCAGCAACACCAGCCACAAGT
CCTACCGGCCTCTCACCGTCCTGACTTTCAGGATTAACTACTACCTCTCGGGAGGCTTCC
ACCCCGTGGGCTTTCACGTGGTCAACATCCTCCTGCACAGTGGCATCTCTGTCCTCATGG
TGGACGTCTTCTCGGTTCTGTTTGGCGGCCTGCAGTACACCAGTAAAGGCCGGAGGCTGC
ACCTCGCCCCCAGGGCGTCCCTGCTGGCCGCGCTGCTGTTTGCTGTCCATCCTGTGCACA
CCGAGTGTGTTGCTGGTGTTGTCGGCCGTGCAGACCTNCTGTGTGCCCTGTTCTTCTTGT
TATCTTTCCTTGGCTACTGNAAAGCATTTAGAGAAAGTAACAAGGAGGGAGCGCATTCTT
CCACCTTCTTGGGTGCTGCTGAGTATCTTTCTGGGAGCAGTGGNCATGCTTGTGCAAAAG
AGCAAGGGATCACTTGTGCTGGGTTTAAAATGCCGGAATTTGACAATCTTTGGGTGATAG
GC
Sequence 131
GTCCGCTGGGGGCCCTGGGGCTCTCTGCGTCGAGAGCGCTCGAAGACCCGGGATTCCTGG
CCCGATCGCGGGCGGGGGGAGACCCCAGCTCCACCCCAGCTCCCGCCGGCTCGGGGAAGG
GGCGGCCCCTTTAAGAGCGCGCGGCCCCGCCCGCCCCCTCCGGGCAGGATCCGAATTCCA
GGGAGGCGGGGCGGAGACGGCGGCGAGGAGGAGGCCGCGGCGCGGGACGCATAGAGCTGC
GGCTCGGGCGGCGCCTCCTGCGGCGGCCCGGCCCGGCTCCGGCCCCCGCTGGGGCAATGC
TCCCCGGG
Sequence 132
TCGCCNCGCGTCCGGGCACACACATGCCAGGCTATTTTAAGAACTACTACAACTATGATA
AAGCTGTGAATATGTAGCCATGAACCAAAACAAAGTCTCTGTCCTTGTGGAACATTTGTT
CTGTCAGAGAAGACAGTGTGTTGGCTCACATTGTGGTCAGTGCTGTTGAGCAAAATAGGT
CAGAGTAAGGGGGATGGAGACTGGTGGGAGGAATGCTGCTTTATCCAGGATGGGCAGGGA
GGACTCGATGGTGTCAGCACTGAAGGATGTAAGATCTGCTGCTCTGGGGAGAGGAGCAGC
ATGGAAGGAGTAGAGTGCAGAGGCCATGAGGAAGGATCAGGCTTGACTCCTTTGAGCAAG
GGGGATGGGAAGAGTGACGGNAGAAAGAGGGACAGGCCACATGGCCTGGTGGCCTGTGCT
GAGGCCTTGGGCTTTTCTTCAAGTGAGATGAGATGCCATTGGCCAGTTTGGGCAGTGATT
TNATCAGACTTGGTTCAGCAGGACCATNCTGCTTGGCAATGTGGAGAGCANGCTGAAG
Sequence 133
CGCCNCGCGTCCGAACAGGCCGGGCACCAAGGCGCAGGATTTCTATAATTGGCCTGATGA
ATCCTTTGATGAAATGGACAGTACACTAGCTGTTCAACAGTATATTCAACAGAACATAAG
AGCAGATTGCTCCAATATTGACAAAATTCTTGAACCACCTGAAGGCCAAGATGAAGGTGT
GTGGAAGTATGAACATTTAAGGCAGTTCTGCCTTGAGCTAAATGGACTTGCTGTCAAACT
TCAGAGTGAATGCCATCCAGATACTTGCACTCAAATGACAGCAACTGAACAATGGATTTT
TCTTTGTGCAGCTCATAAAACTCCAAAAGAGTGTCCTGCTATAGACTATACTAGACACAC
ACTTGATGGTGCTGCATGTCTTCTGAATAGCAATAAATATTTTCCCAGCAGGGTTAGCAT
AAAGGAATCATCTGTAGCGAACTAGGATCAGTATGCCGTAGGATTTACAGAATATTTTTC
ACATGCTTATTTTCATCATCGGCAGATATTTGGATGAATATGAAAATGAAAC
Sequence 134

TABLE 1
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GCGTCCGCGAAAGCTGGGAAGCCAGGTCTACCTGCCCCAGACGAATTGGTGTACCAGGTG
CCACAGAGCACACAAGAAGTATCAGGAGCAGGAAGGGATGGGGAATGTGATGTTTTTAAA
GAAATCCTTTGAAGATGATGCTGCTTTTTACAAAGCATCGTTTTAAAGCACATGGCCTTT
TTTTTTTTAATTATTAGTGGTAGTAATATATAGAATGTATTACATAACTGTCACTGAAGT
GGTTGGGGAAAATGTGGTGACTGAGGTACAGGAAACTACTAATCTTGCCATCTTGCTTTA
AGGTGTTATGGTGGCACAGTTACTGCTCGCCTGTTAAATTTCAAATGTCCTGTTTGATAC
TACTGGAGAACACTATTTTTAATACAGAAAAAGCTCCCTATAATGCACTTCAGAGAAATT
AA
Sequence 135
TCGACCCACGCGTCCGGGAGTCCCCCCTGCCCCCCATCAAATGCTTCCTGCAATACTTTG
CACACCAGAGACTGGGCCTCCCCAGATCCAGGGGGACAGGGGTCCCTGGGGGAGTCCCCA
GGGCCAGCCCCTCCAGGCCAGCTGCACACACTTGACACTGATTTGCACAGTCTTGCACAA
ATAGGGGGTAAGAGCCCAGTGGCTGGGGTGGGCAATGGGGGTAGCCTCTGGCCTAGGGAG
TCCCCTGGCACTGCCAATGGGCACAGTCCCGAGCACACACCCCCTGGCCCTGGACCCCCA
GGCCCCTGCCCCACCAAGCGAAGGCTGCTTCCTGCTGGAGAAGCCCCAGATGTCAGCTCT
GAGGAAGAGGGGCCAGCCCCTCGGAGGCGCCGGGGATCCCTGGGCCACCCTACTGCTGCC
AACAGTTCTGATGCCAAAGCCACACCCTTCTGGAGCCACCTGCTGCCTGGGCCCAAAGAG
CCTGTTTTGGACCCAACAGACTGCGGTCCCATGGGGCGGAGGCTGAAAGGAGCCCGTCGC
CTGAAAGCTTGAGCCCCCTTCGAAAGCCTNCGGAAGGGGCCAGGCCTGCTGAGCCCCCCC
AGT
Sequence 136
CGACCCCGCGTCCGTGAGAATTCAGCTTTGGAGTCCCGGGTGAGGGGTTTTAGATAAACC
CATCAATATCACCCACATTCTGTGACTCTTTGCATCACTCGTGTTATTTATTTATTTATT
TATATTCTGCCTTGTTCCAGAAAAGTGTTTAAGGCAACAACGCTTGTTTTTTTGGTGTTTT
CTTTTGACATTTGAAAATTTAGTACATTGTTAAAATGTACTTGTTAAACAGGTAATTTTA
AAGAGAAGGAACAATTGTTTTTAGTAAGTTTTCTTTTTCCTTTTTCAATGAATTGATTCT
TCAAATTAAAAGTTCTTGAGAGAAGGAGAGGAAGATACAGCAGACATAGGACTGAGCCAA
GGAAGAGTCTGCCTGAGAGAGACGCTTGGCCTGTGCTTTGCTGCCATCCGTGCGGCCTTG
GCCACA
Sequence 137
TCCGATTTTTTAAATCTATTGGCCGTGTTGTCCTACCTGAAGTTCTTCAACTGCCAAAAGC
ACAGCCCTTTTTCTCTGAGCTGGTGGTTCTGGCTAACACTGACAGGGGTCGCTTGTTCCT
GTGCAGTGGGCATCAAGTACATGGGTGTGTTCACGTACGTGCTCGTGCTGGGTGTTGCAG
CTGTCCATGCCTGGCACCTGCTTGGAGACCAGACTTTGTCCAATGTAGGTGCTGATGTCC
AGTGCTGCATGAGGCCGGCCTGTATGGGGCAGATGCGGATGTCACAGGGGGTCTGTGTGT
TCTGTCACTTGCTCGCCCGAGCAGTGGCTTTGCTGGTCATCCCGGTCGTCCTGTACTTAC
TGTTCTTCTACGTCCACTTGATTCTAGTCTTCCGCTCTGGGCCCCACGACCAA
Sequence 138
CGACCNCGCGTCCGGAAGGACCCTCTGAGCTATTTTGCGGCATACGGGAGCAGCAGCTCA
GGCTCCTCGGACGAGGAGGATAACATCGAGCCGGAGGAGACGAGTCGCAGAACCCCGGAT
CCGGCGAAGTCGGCGGGCGGCTGTAGGAACAAGGCGGAGAAGCGGCTCCCGGGACCTGAC
GAGCTGTTTAGGAGCGTGACTCGCCCGGCCTTTCTCTACAATCCGCTCAACAAACAGATA
GACTGGGAGAGGCACGTCGTCAAGGCGCCTGAGGAGCCTCCAAAGGAATTCAAAATATGG
AAGTCAAATTATGTACCACCTCCTGAGACCTACACCACTGAGAAGAAGCCTCCGCCTCCA
GAGCTTTGACATGGCAATAAAATGGTCTAACATATATTGAGGACAATGGTGATGATGCTC
CACAGAATGCTAAAGAAAGCTAAGGCTTNTACCA
Sequence 139
CGACCACGCGTCCGGGCTGGCGAGCCCGGCTGAGGAGCCTCTTGGGTCGCACTTACCGCC
GCGTCCGCTCCCGGTCCCTGGCCCCTCAGCGGCATGGCGTGCGGGGCGACGCTGAAGCGG
CCCATGGAGTTCGAGGCGGCGCTGCTGAGCCCC
Sequence 140

TABLE 1
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CGTGTCCGGTGAATGGGAGCGGAACTCACAGGACACAATGAGCCGGGTCACTGATGGCCT
TGCTTTCTAAGAATCTCACAGTGAGCCCTAGAACTCTCTACGTGGTAACACTGTGTGCCT
TTTTCAGAGAAGAGCCTATCTTAGATCTTAGCCTAACGTTGGGTCTATTGTGTTGCTGGA
GAGACCAGCACTGACATTCATCTCAAAGCACATGGTATGTTTGACTCCTATGTTGACTCA
ACTACCCATCTTGTACTGGGACACTCGCTTTTTTTTTTTTTTTTTGAGACGGAGTCTTGC
TCTGTCACCGGGCTGGAGTGCAGTGGCACGATCTCGGCTCGCGGCAGCCTCCGCCTCCCG
GGTTCAAGTGATTCTTCTGCCTCAGCCTCCTGAGCATGTGGAGCTCAGGCTGAAGGTGAT
GTGGCCGCCC
Sequence 141
GTCCGATTGATTCTTCTATGATGCGTGTTCATTATACAATACACATTCTCGGAAAGGCAG
AATTATTTGCTTTTATGATTGTTTTTTGTGACCTAAGAAACGGTTCTTCCCCCATTTTCC
TATCCCAGGCCAAAAAATATTCTCTCACGTTTTTCTGTAAGAGCTTTATAAGTTCAGCTT
TTATATTGAGGTCTGTGATTCATCTTGGATTATTATGTGTAGGTTGTAAAATAGGAATCT
AGGTCCAGTTTTTCCATGTGGATATTCAGTTATTGTGGGGCCAATTGTTGAAAAGTCTCC
CCAAAGAACTGCTTTCTTATCAGAAAGATAAGATATATTAAAAGTGTATATCTAAGTCTG
GGTTCTCTTTTCTGTTCTAATGGTTGATATTTTTATCCTTATGCCAGAACCACACTGTCA
TGATTGCTGTAGCTTTATAATAGTCTTGAATCAAGTTGCTTTTCAGTTTTGTATTTTTCA
AAATTGCTTTCGGTATTCTAAGTCCTTTGCATTTCTGCTAAAATTTAGAAGCAGCATGTC
TACCAAAAGGAAAAAAAAAGCC
Sequence 142
TCCGGCGGAAGAAGGTGCGTCCGCGGCTGATCGCGGAGCTGGCCCGCCGCGTGCGCGCCC
TGCGGGAGCAACTGAACAGGCCGCGCGACTCCCAGCTCTACGCGGTGGACTACGAGACCT
TGACGCGGCCGTTCTCTGGACGCCGGCTGCCGGTCCGGGCCTGGGCCGACGTGCGCCGCG
AGAGCCGCCTCTTGCAGCTGCTCGGCCGCCTCCCGCTCTTCGGCCTGGGCCGCCTGGTCA
CGCGCAAGTCCTGGCTGTGGCAGCACGACGAGCCGTGCTACTGGCGCCTCACGCGGGTGC
GGCCCGACTACACGGCGCAGGTGCGTGCACCCCGTCCGCACCCCGCCCCTGCAGCCGCCT
GGTCTCCCCGCCTCCCCTCCTCCCTGCAGGTTTGCGTGGCTGAGGCTCCCACCTCCTGAC
CTCGGGGGGCCGAGAGCTTTGCGAGCTGACCCCGCTTCTTCTGGCTTTGCAGAACTTGGAC
CACGGGAAGGCCTGGGGCATCCTGACCTTCA
Sequence 143
CCCGCGTCCGAGATCCTGTAGGTGAAGTTCTCCTGTGCTCCACAGCCACCCAGAGGAATT
CCAAAACCAGCAGTGGAGGACTTGGGGAGGACAGGAGGGAAAACATGGCGAGTTCATCAG
CTCTGTTTCCTTTATTAAAATATTTCTGTAATTGGTGGTGGGAAATTGAAGAAATCAAGT
GATTGCATCAGCGCTGGAAAAAGCTGCCAGCACTTGGCAGTGGAAGAGAATATATGCTTT
ATACTGGACTTTTTGAAAAAGAGGCTGAGTTTGGCCAGATTGCCGACCAGCAATGGAAAA
ACTAATTAGGTGCCTTGCCTGTGAGCCAGACGCCCAGCAGGGCTGTGGCGCATGGCTCCC
GCCGCCTCTGAAGAGGACACTTTCTAGTGAATTCAGTTCGTGCTACCCTTGAGCAGCCTG
TGCTACAGCAGGCACATTTGTGAATCTCCCAGCCTGTGCCTGGCGTCNGAACTGTAGCTT
CCCAAAGAC
Sequence 144
CGCGTCCGAGTAAATCTGTTCTGCACTAAATTATATCAAAATAAATATAAATAATTATTT
CGTATACCATTCGTTATATACATTTCAGTGTTTTTAATAATGTCAATTTCTTATATTTTA
AGGAGAACTCTAGTTATTTTTATAAATCTAATTGACTTAATTTTGTGGGAATATAAAAGA
AGTGATTAAAAACCTTTGGTTTAAAGTAGTTAATCCTGAAATCAAGCTCTGTAAATATTG
TGTAGGGATATGGAGAAATCCTCAAAAAGAAAGAGCTAAAGAAAATGGCAGGGATGGCAT
CTTGGGAGTATAACTGAAAGTAGGAAGATGTGGATAGAAGAGTCTTATTTTTAATCACAG
GGCATATGTGCTATTTGAATTATTTTGACAAAAGTATAAAAATATGGAATTATGCATTGT
GTGTGTGTGTGGTTTCATCTGTTTAAGAAATATGTGATGGAGACTGTCCTATCATCAGGA
AATTATTCCAGT
Sequence 145
GTCGACCNCGCGTCCGCGGGAGACACCGACCGCGGCGGCAGCAGCAGCAGCAGCGAGA

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GGCAGAGGCGGCGGCGGCGGGGAGGACAGCACGGCCGAGGCTGCCCAGAGGCGCCTCCTC
CACACCCCCCGCCGCAGCAGCACCGGCGACAGATTTTTTAAAAAAATGGATTTGGCCAACC
ATGGACTTATTCTACTGCAACAGTTAAACGCTCAGCGAGAGTTTGGTTTCCTGTGTGACT
GCACGGTTGCAATCGGCGATGTATACTTCAAGGCACACAAATCAGTTCTTGCTTCATTCT
CCAATTACTTTAA
Sequence 146
CCACGCGTCCGATCCTCCCCAAGGCAGAGGTGTGCGTGCGGAACCATGTCCAGCCCTACA
TCCCATCCATCCTGGAGGCCCTGATGGTCCCCACCAGCCAGGGCTTCACTGAGGTGCGAG
ATGTCTTCTTCAAGGAGGTCACGGACATGAACCTGAACGTCATCAACGAGGGCGGCATTG
ACAAGCTGGGCGAGTACATGGAGAAGCTGTCCCGGCTGGCGTACCACCCCCTGAAGATGC
AGAGCTGCTATGAGAAGATGGAGTCGCTGCGACTGGACGGGCTGCAGCAGCGATTTGATG
TGTCCAGCACGTCCGTGTTCAAGCAGCGAGCCCAGATCCACATGCGGGAGCAAATGGACA
ATGCCGTGTATACGTTCGAGACCCTCCTGCACCAGGAGCTGGGGAAGGGGCCCACCAAGG
AGGAGCTGTGCAAGTCCATCCAGCGGGTCCTGGAGCGGGTGCTGAAGAAA
Sequence 147
NACCACGCGTCCGCCNCGCGTCCGCTTGCACCCGGTGAAGAGCGTGCGTGTGCTGAGGCC
GGAGCCGCAGACGGCTGTGGGGCCCTCGCACCCCGCCTGGGTGCCCGCGCCTGCCCCGGC
CCCCGCCCNCGNCCNCGCCCCCGNCCNNGCTGCGGAGGGCTTGGACGCCAAGGAGGANCA
TGCCCTGGCGCTGGNCGGCACAGGCGCCTTCCCGNTGGACGTGGAGTAC
Sequence 148
TCCCAAGAGCTGCANGNNNCAGCCGCGACAGCAAGAACCGGNAGAGCCGGCAGACCGCGG
CGGCGGCGGCGNCGGAGGCAGGAGCAGCCTGGGCGGGACGCAGGGNCTCCGCGGGCGCAG
GAAGGCGAGCAAGAGATATNCTCTGAGAGCCAAGCAAAAGAACATTAANGGAAAGGGAAG
GAGGAAANGAAGGCTGGATACCGGNGCAGTGAAAAAAGGCACTTCCAAGAGNTGGGGGCA
CTCAACTACGCCACNAGACTCTGACCGGGTGGCCCAATCAAGCCAATGAAGAAACCTATA
ACCCGGNTTAACCTNTNATTGGCCTGCCTTCTNNNTGGGGGGGTGGGGGCCCAAGCCCNC
TTAACCCCCCAACCTTCNNTTTCAAACCTATCCCAACCTTATTCNAAAANGAAGGGGANC
CTNAAGGATGGGGNTTTCCCCCAAGGCNAAAAAGGAAAAAAAGGGGGCCCCCNNGGGAAG
CCTTCNTTCTTGGGGAAAAACAAGGCAAAAAAAATTGGAAGCCTGAAAACCCGGCTTCAA
AAAAAAGGGG
Sequence 149
GGCCGAAAGGGGGGCAGGTGGTCGGGCCGCGCAAGCGGAGATGGAATGGGGCCCGGGCTC
AGACTGGTCACGGGGGGGAGGCTGCCGGCGTGGACCGCGGGAAGGCGGGGCTGGGGCTCGG
CGGGAGGCCACCCCCACAGCCGCCCCGGGAGGAGCGCGCCCAGCAGCTGCTGGACGCGGT
GGAGCAGCGGCAGCGGCAGCTCCTGGACACCATCGCAGCCTGCGAGGAGATGTTACGGCA
GCTGGGCCGCCGGCGCCCGGAGCCGGCTGGTGGCGGGAACGTCTCANCCAAACCTGGAGC
G
Sequence 150
CACGCGTCCGGCCTGCTGTTNACCTGCGGGACCCCAGGAACCTGGACTTGTTTCTCAAAG
TGGTTCATGGAGATGTCACCCCCTACGACCTGGTGCGGATGAGCTCGATGCAGCTGGCCC
CCCAGGAGCTGGCCCGCTGGCGGGACCAGGAGGAGAAAAGGGGCCTGAATATCATTGAGC
AGCAACAGAAGGAGCCGTGCAGACTTCCAGCCTNCAAAATGACCCACAAGGGCGAAGTGG
AGATTCAGCGGGACATGGACCAGACACTGACCCTGGAGGATCTGGTGGGACCGCAGATGT
TCATGGACTGCAGCCCACAGGCCCTGCCCATCGCATCAGAGGACACCACGGGGCAAGCAT
GACCACCACTTCTTAGACCCCAACTGCCACATCTGCAAGGACTGG
Sequence 151
TTTTTCCTTAGAATCTTCGAGAAAAAGATGAAGGTATTATTCTCAGTTTCGAGATCAGGA
CTCCTCACCACCAGGCGGGGGCTTTAAGGTAGACACTACAGGGAATCTGATCTCAGGGTG
ATCCTCTCCCTTCCACTTGCAAAAAGAGAGGAGCAGGTGGGCCACTGCTCTCTGAGATGT
TAACACCCCTCACACTCCACGGGCATGCTTTGTCATTCTGCACACCGGTGTAGCTGCAGC
TCTGTGTGAATTCAGATCTCAAGAGAAATGTAAATCAAAAGTATGAGTTTCTTTCTTTCT

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TGGGTGCCACAGTAGGAATGAAATGATGGGGACTTTTGGAAGCCCCTGGACTTGTGGCCC
CTGTAGAAGAGCAGCTTGGGCAGGGTGTGATGGCCATCTCTGTCTCTAGGGGCCCTGTGG
A
Sequence 152
TGGCGAGAGCGCTGGTGCCGAGTGAAAGATAACAAGCTCATTTTCCACAAGGACAGGACC
GACCTGAAGACCCATATTGTGTCTATTCCGCTCCGTGGCTGCGAGGTGATCCCGGGTTTG
GATTGTAAACATCCTCTGACGTTCCGGCTGCTGCGCAACGGCCAGGAGGTTGCAGTATTG
GAGGCATCTTCTTCTGAAGACATGGGCAGGTGGATTGGGGATTTTACTCGCAGAGACGGG
GATCGTCCACAGACCCGGAGGCTCTGCACTATGACTACATTGATGTGGAAGATGTCTGCA
ANGTGTCATTCAGACAGGCCAAACAGACCTTTCTGTTTTTATGAACAGGGCGTGTTATAT
CTGCTAACCCATATCTAGGGGGCACCTTCAACGGGTTATTGCCCACCCAGCGGGACGGCA
CTTTAATATGACGATGTTTCCGTNCCATAAACCGGNTTGNTTAAAGGGTAAAA
Sequence 153
GTTCGACCCACGGGCGTCCGCGGGACCGCCGTGGGNNNNACATACTATGCGNACAGGCGC
GTTGNACACAAANGGCCCATTCCTGTAGCCTCACACTTGACTACACATGGGGGANTCACT
CGGATTCGGNTCTCCACGTGGNNGNTCTTTGTTCTGTACTCTACGTAGCTTTGGCTTTTG
TTTTCTCGTCGCAACAGGGCATGAGACTTCGTCGACCTTNGGGGTCTGTATAGTCTTTGA
CTTACTACGTGTAGGTCTCAATACAAAGTGGGANATANTCATATCCGTCCGCGAAAAGTA
ATTCTTGGAAAAATTTACCCTTGTCTCCCGCNTTATGAAACGTGAACTAAGTAACTCACT
TTGCCCCTGGGGCGCCTCTNTTTAACANTGTTCTTTTGNCGAAATCATCATAACCTTCAA
CTGAAAACAATGTGGTCAACAAACTGACTATGGAGGTCTTAGGCTCNGTCTCTAAGATCT
TTAACCTTGTTTATCGGCGCGTGCGGCGTNGTCCGAACGAAGAGACTATAACCCGCACTA
TAACNAAAACTCTTTTTTAATCCCACCACCTCGTGAGGGANGGGCCCTAAGACTGAAACT
GTAGTAAGTCCTATTGATTTGCGTAGGAGGANTTAGGAAA
Sequence 154
NCGCGTCCGATAGTCTACCAGCCTTACCTGGTTGATTACACTTGTAAAAGAAAGATTAAA
AGCAGGCCAGTGACTCTGGTCTGCTTGAACATGTGAATGTAGTGGTTTGAGCAATCTGGA
GTTTGCCCTAGTGTCAAATTCCAGACTGTCCATAGTGTCCAAAACCTGAGGCAGACACTA
ATGTTAACCCCCAGCACCCCGTGATTGGAAACAAACCTAAATACGTATTGGGAACTTAAT
AGCAATTTTAAGCATTCTGATAGATTTTTTGTAGGGATGGGGTCATGCCATGTGGCCCAG
GCTGGTCTGAAAACTCTGGCCTCAAGTGATCTCAAGCTTTGGCCTTCTAAAGTGTTGGGA
TTACAAGGTGTGAGGCATTGCACCTGGCTTAGCCGTCTTGATTTGACATTGTAATGAAAA
AGTGTGAGTCTTATTCTACCAGGGGCCCTTTTTTGTCCTCTTGAAAATNGAATAACCANG
GGAAGGGGGAA
Sequence 155
CCNCGCGTCCGTCCATCACAGCCTCCGAAGGTGCTGGGATTACACGGCATAAGCCACTGT
GCCCAGCCTGTTTTTAATAATGATATTAAGTGGGTTTGGTTCATGTGTTATTAATCAGTG
TTAATAATCGTACTTTTTTTTTTTTTTTTTAAAAGAAACCATGGGTATTCTAAAATCAGGAG
TCCAAATAAAAGAAAGTTCTCGGCTGTGCGTGGTGGCTAACACCTTGTAGTCCCGGCACT
TTGGGG
Sequence 156
CGCGTCCGAAAGGAGTCGCGCCGCCGCCGCGCCCCCTCCCTCCGGTGGGCCCGGGAGGT
AGAGAAAGTCAGTGCCACAGCCCGACCGCGCTGCTCTGAGCCCTGGGCACGCGGAACGGG
AGGGAGTCTGAGGGTTGGGGACCGTCTGTGAGGGAGGGGAACAGCCGCTCGAGCCTGGGG
CGGGCGGACCGGACTGGGGCCGGGGTAGGCTCTGGAAAGGGCCCGGGAGAGAGGTGGCGT
TGGTCAGAACCTGAGAAACAGCCGAGAGGTTTTCCACCGAGGCCCGCGCTTGAGGGATCT
GAAGAGGTTCCTAGAAGAGGGTGTTCCCTCTTTCGGGGGTCCTCACCAGAAGAGGTTCTT
GGGGGTCGCCCTTCTGAGGAGGCTGCGGCTAACAGGGCCCAGAACTGCCATTGGATGTCC
AGAATCCCCTGTAGTTGATAATGTTGGGAATAAAGCTCTGCACTTTCTTTTGGCATTTCA
AGTTGTTAAAAACAAATAGGA
Sequence 157

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CGCGTCCGGGTGTCNAGGCCATGGGGCAGCCCTGGGCGGCTGGGAAGCACGGACGGGGCG
CCCGCGCAGCTGCCTCTCGTGCTCACCGCGCTGTGGGCCGCGGCCGTGGGCCTGGAGCTG
GCTTACGTGCTGGTGCTCGGTCCCGGGCCGCCGCCGCTGGGACCCCTGGCCCGGGCCTTG
CAAGCTGGCGCTGGCCGCCTTCCAGCTGCTCAACCTGCTGGGCAACGTGGGGCTCTTCCT
GCGCTCGGATCCCAGCATCCGTGGCGTGATGCTGGCCGGCCGCGGTCTGGGCCAGGGCTG
GGCTTACTGCTACCAATGCCAAAGCCAGGTGCCGCCACGCAGCGGACACTGCTCTGCCTG
CCGCGTCTGCATCCTGCGTCGGGACCACCACTGCCGCCTGCTGGGCCGNTGCGTGGGCTT
NGGCAACTACCGGCCCTTC
Sequence 158
CGACCACGCGTCCGGGGACTCAGGCATGCACCACCACGCCCAGCTAATTTTTGTATTTTT
AGTAGAGACAGGGTTTCTCCATGTTGGCCAGGCTGGTCTCGAACTCCTGACATTCGGTGA
TCCACCCGCCTCGGCCTTCCAAAGTGCTGGGATTACAGGTGTGAGCCACTGTGCCCAGCC
CCTTCCTGTTGAGTAAAAGGAAGAACTTCAGGGTAAGACACTGTACAGTGCCCAGCATCT
GGAGAGCCGCCAGCATTACCCCTGCCTTAGGAGGTAGTCGTCTCCTCATCACTACAAGGT
ATTGAAGCCTGAGGGCCCCTGGGCAGGACGATAGAGTGAGATTGCCCTGGGGACTCAGGA
AAGGAAACATGCCGTATTTNTAGGGAAGGAGCTGCTGCTGCCTCTCAGTGACTCTGGTTC
CAGGAGGGAAGAGCCGAGAGCTAGGGTTCCCTTTCATAGGGAGAAACCCAGCAGGGTTTG
GGGTGTTCT
Sequence 159
ACCACGCGTCCGAAAGGAGTCGCGCCGCCGCCGCCGCCCCCTCCCTCCGGTGGGCCCGGG
AGGTAGAGAAAGTCAGTGCCACAGCCCGACCGCGCTGCTCTGAGCCCTGGGCACGCGGAA
CGGGAGGGAGTCTGAGGGGTTGGGGACGTCTGTGAGGGAGGGGAACAGCCCGCTCGAGCCT
GGGGCGGCGGACCGGACTGGGGCCGGGGTAGGCTCTGGAAAGGGCCCGGGAGAGAGGTGG
CGTTGGTCAGAACCTGAGAAACAGCCGAGAGGTTTTCCACCCGAGGCCCGCGCTTGAGGG
ATCTGAAAGAGGTTTCCTAGAAAAAGGGGTGTTTCCTCTTTTCGGGGGGGTCCCTCACCAA
GAAGAAGGTTCTTTGGGGGGTCGCCCTTNTTGAGGGAGGCTTGCGGNTTAACAGGGCCAA
AAAANTTGCCATGGGATGTCCAAGAATCCCCTGTAATTTGATTAAATGGTGGGGAAATAA
AGCTTTGCAACTTTTTTTTTGCNATTTAATTTGGTTAAAAACA
Sequence 160
TCCGCTCCCCTGTTTTCTTCCTTTTTTCTTTTTGCTTGTATGCACAACGGTAGGACTTACT
TCGTAAGAAACAAAATGCCAGTATTTTCTTAAGCCATGATGTGAAACCAATGACCCTGTG
ACCACATGGCACAGAACACTAAATTTTGGTCCCATGGCTGAAACTTGAGGGTGACTAAAA
GTAATGCCTGTGAAACATGATATCTATCTGGGATGGCCATTTGATCTCTAAAAGGAATTT
TGTNCACTCCACAGAACTCCTATCTATAGTAAAATTTGATTTTTC
Sequence 161
CGTCCGGAAAAATATTAAACAACTCATTTTAAGATTCAAATTAACTAATTCCTGCATATA
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TTTCTCTCTTTGTTGTTTAAGGTATTAAGCACCGAATTATTACATGAGACTGGCAGATAG
CTATTAATCCTCTTACAGATTTGAGAAAGTTGATTCTCAAATATTTATGCACCTTCTCCT
TCATTGTTTTCTTTAAATCTGTCCTCTTAAAAAGCTTCTTAAGAGCTCAGTTAATGCTTT
TGACTTAACTAGGAGAAAAAGGCATGATAATACAGGCAAGATGGCATTGTTAGCAATTCT
GGTAGGTGGTTTTGGAATGAATCCTAAGAGGCAAGGGGATCTTAAGGACAAGGAAGAGAA
GAGAGAGGGGGNGGGATCCCTTTGATCTCTTTCTCTGGNAATCTTAAATGCNTAATTTTA
CTAAAACATGTTCTCAATTCATTCATAT
Sequence 162
CCCCGCGTCCGGATTAATGAGTGTATGCCTAGCTCTTTCTCCAGTTTACTTTTAGACCAT
ATTGTTGTTTGTTTGAATATCATTCCTTAGGCTATGTTGAGAGTAGAGTGGCTTCCCAT
TAGGAGAACTAATTTAGGGCATGTCTTTTGCTGAATCCCGTCAGCATATTTAACAAATTC
CCAATTCTAGATAATTTCCTTTTTATTTCTCTAGTACCCTTTGCCAGGGGCTCTACACATC
AAAGGTGTTCATGAAGTATTTGTCAAAGGAAAGAACAGTAATGACACCTAACACATAATG
AGTGATTAGTATGTTCCAGGCATTGCGTGAGCTATTTACTGTGAGTGATTTAATGTTATC

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TTCCCAGCAGACCTCTGAGGTAGGGTACTAGTATGATCCCCATTTCGTACATGAGGAAAC
TGACACTAAGGGACATAAAATAAGTTTTTGAAGTCACAAAGTGAATAAAAGGAAGACCAG
GGTTTTAATTGGAAGCCCATA
Sequence 163
TAGACTTTTGCAGTGTTAAACACAGCTTCCTTAACTCTTAGAACTGGAAGTTGTAGAGCT
CTCCTTTTGGTGCCTTTCCAGCCTTTATACACACTATTGTAGCTTTCTTAGGTTTGATAG
GTAGCGTTTCAAGTAGTTTAGCTGAGACAGNGAATGTATTAGGTTCAACATGACCTTGTG
TTTTATTTGTGTTTGCCAACAGGATGCCTTATTTGTTTGAGAAAAAGATGTACTAGTGTC
ATTCTAAACTATCTCCTTTTTTAGGATTCTAAAGAAGTTAATCATCATCCTTTTGTTTAT
TTTACCACCATTTAGTGCCTTAAATCCTATCAAGAAAGCAGTGTTACTGCTCAATGCCCA
AATAAGACACGCGGATATTGCTATTGCTTGCTTTTGAGTTAACAGGCCNACTTTTTATAC
TTAAAACCTCA
Sequence 164
GCCCCGAAGTCCCACTGTCCCTGCCGAGGCGCCGGCGCCGTCCCCTGTGCCCTTGACCAC
GCCAGCCTCCGCCGAGGAGGCGATACCCCTCCCCGCGTCCTCCGACAGCGAGCGGTCGGC
GTCCAGCGTGGAGGGGCCCGGAGGGGCTCTGTACGCGCGCGTGGCCCGACGCGAGGCCCG
GCCGGCCCGGGCCCGGGGCGAGATTGGGGGCCTGTCGCTGTCGCCATCGCCCGAGCGCAG
GAAACCGCCGCCACCTGACCCCGCCACCAAGCCTAAGGTGTCCTGGATCCACGGCAAGCA
CAGCGCCGCTGCAGCTGGCCGTGCGCCCTCACCACCGCCGCCAGGCTCCGAGGCCGCGCC
CAGCCCCAGCAAGAGGAAACGGACGCCCAGCGAACAAATCGGCGCATACGGTCGAACACN
GGAAGCCCCCGGACCCGGACCCAACGCCGGGGCCCCCCG
Sequence 165
AGTCCGCCCCACGCGTCCGGTGAGTTTAGCGCTGCTGTCCGGATGGGTTGGTAGCAGACA
GGGTGGAGTAGGGTTAAGCACACTGGTCACCTTAGGATTGGTTTCCTGGTGCTGGAGAAT
GGTTAGGACACAGGCCTTGGAAGGTTTTTTGAGTGTGAAATATTACTCAGCGTTTTCTGC
AGACCTCGCGGGCAATGCCGCTTCTAATTTTATCCAGGCCTTCTTCTGTAGGGAGGGCCT
GTTAAGAGTTGAGCAGCCCGATTTCTGAACCCCTCTAAAAAGCTGTGGCTGATTGGTGGC
TTTTTTTTTTCTTGGAGAGGGGGGTGTCAAAGATTTCTTTAAAATCGTTAGTGATGTGGT
CTCGCTTTA
Sequence 166
ACGCGTCCNAAAATGTGTGGTACATGGAATATTTTTTATTATGCTTATTTCGTATTGCCA
GGTAGATGGCCAGCCTGACATTCAAAATTATTTTATCAGCCCCTAAATGTTAATATTTCC
CAAACTATTTAAATCAGTAGAAGACATTTTTACTATTAAGAATAAAAAGTTATAATATAA
AATGGATTAAATGCCAGATTATATGCTAAACAAGTCCTTTAAATTTTTAACTTAATATTT
TTAACAGATTTTTTTTTTTGAGATGCAGTTTTACTCTTGTTGCCCAGGCTGGAGTGCAATG
GCACAATCTTGGCTCACTGCAACCACCACCTCCCGGGTTCATGCGATTCTCCTGC
Sequence 167
CCGTCCGCGAGGTTAGGAGATCGAGACCATCCTGGCTAACACGGTGAAACCCCATCTCTA
CTAAAAATACAAAAAAAATTAGCCAGACATGGTGGCAGCCTCCTGTAGTCCCAGCTACTC
GGGAGGCTGAGGCAGGAGAAGGGCATGAACCTGGCAGGCGGAGCTTGCAGTGAGCCCAAG
ATGGCGTCACTGCACTCCAGCCTGAGGGACAGAGCAAGACTCTGTCTCAAAAAAAAAAGA
AAAAAAAGTGGCACAGATCAATTATAAATCACTGCTTCAAGGCCAGTGCTCTCACTTTGT
ACATTAATAATCTCAGGCCCAAATAAGATAAGTGATATGTCAACGTATGTTCACTTTGGT
CTTTACATGGCAGCTATAGTATACCGGAATATTATAAGCTCAGATCGTCATAGCTACATA
ACTCCTTTAGTTGGGAAGANACGCCGTAAATGCCCATCAAGANTAGCAAGTCTTGCATTT
GACT
Sequence 168
CGCGTCCNGGTAACTTGAATAAGGATTATGTGCCCCACCCTTACTCTCATTCCTGCTTCC
TCTTGGGCTCAAACAGGGTATGAGTATGAAGATTTTGCCTTTAGTTCCTGAACTGAACCT
GCTTGCTATCCCTTTCCTCCCCACCACTACCTTATTCCTTCTCTGCCTCCAAATTGCCAC
TTTGTTTTGAGGCTTCCTTCCCTACCTTATTATTCTGAAGGAAGTAGAGATCTTGCTTCT

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GAAACCCCTCCTAAGAAACTGCCCAGGGACAAGATAAATTACAAACAATTCATGGGAGTT
TACTACCTAAGTTGCTTCTAGGGCATATGTATACCATACTAGTAGTCTAGATTTCTGG
Sequence 169
AGGGAGTCGCCCCCGCGTCCGGACAGGATCTATGGATGGAAGAAGATGAAAACAAACACA
CAGCCATAAAGGTAATTGTTTCTGGCCAACATCTTTCTACTGATGCTTTGTTTTGATTGT
ATGTTGCTGTTTATATTTTCTCAAACTTGAGGCTCTATTTTATGAAATGTTGAATATAAA
TACATTGTATTTAACTTGAAAAATTCCTGGAAATATACCTGATAATTACCACCTGAGGAA
TCGNTTTATTTTATGAAAGTAACAGCGTGATGAATACTGTAATTACAAAAGAAAATTAGT
ACTCACTGACTTATACCCTTGTTTTTTTTTTTTTTTTTTGGTTTGGTTTTTTTTGGTTTTGN
TTTAGGNGACA
Sequence 170
GGAGTCGNCCCACGCGTCCGGCTGGCCAGCAGACCCTGCAGCAGTCATTGGTGGTTCTGT
CTTTCCCTAACCCTTATGNGCTGGAGGACAGAGGAGCCACCTCTTCTCACTGGTTGATAC
TCTGTTCCTAAGACCTCAGGTTACCCAGTGTAGCCTGCTGTGACCCTTCTGCTTCATTTT
CTGCCAAGTGATACAGAACCTTCGTTCTGCTGCTTTGGGGACAGGTGATCCTAGCCCCAG
CTTAGGGCCAGTGCTCTGTGCCACTCTGGAGAAATAGGGAAAAGATAGGGGTGGCTCAGT
ACAGCAGCCCTGTGAAAGTCAAGGCCAGAGCTTTTCTTTTTTAATTTTTTTTATTATTATT
ATTATTATTT
Sequence 171
TTTAGGGAGCCGACCCACGCGTCCGCTTGGCAAACCTCCGGGGACTGTCAGAGGAGGAGA
GGAGCGAGAAGGCTATGCTTCGCTCCCGCATTGAAGAGCAGTCCCAGCTCATCTGCATCC
TGAAGCGGAGGTCAGATGAGGCCCTGGAGCGCTGCCAGATCCTAGAGCTGCTCAATGCAG
AGCTGGAGGAGAAGATGATGCAGGAGGCTGAGAAGCTCAAGGCCCAGGGTGAGTACAGTC
GGAAACTAGAGGAACGCTTTATGACCCTAGCAGCCAACCACGAGTTGATGCTCCGCTTCA
AGGATGAATACAAGAGTGAGAACATCAAGCTGAGGGAGGAGAATGAGAAGCTGAGGCTGG
AGAATAGCAGCCTCT
Sequence 172
CCACGCGTCCGCTTAGCCGCTGCCAGAGTTCCATATGTTCTGGAACCCTTGACTCCTAGA
GTTCAGAACCCAGCCAACTTGCAGTTTTCAGAATGTTCAAGAAACTTCTGACACTCAGAG
TTGCAGAACCTCCTGGTCCCTGCAGATTCCTGGAAATCAGAATATGGTGGTTGNAAAGAA
TCTTGTGGCTGGGCGTGGTGGCTCACGCCTGTAATCCCAGCACTCTGGGAGGCCGAGGCG
GGCAGATCGCCTGAGGTCAGGAGTTTGAGACCAGCCTGGCCAACATGGCGAAATCCCGTC
TCTACTGAAGATAACAAAAATTAGCCGGTCATGGTGGCGCCCGTGCCTGTAATCCCAGCT
CGGCAGGGCCGAGGCAGGAGAATCGCTTGAACCCGGGAGGCAAGAGGTTTGCAAGTGAGC
CNAAAGATCGAGCCACTGCACTCCACCTTGGGTGACCAGAGTCTTAAAAAAAAAAAAAAAA
AAGG
Sequence 173
CGTNCGGTGAATATTCAGTAAGCTAATTAAAATTTGTAAGTAAGATTTCCTTATTAAAAA
AACTATTAAAATAAGANGAAGCCCGTTNAAATAATNATTAGAGNNGGAAAAAAGAAGATG
ACTATCNAATTACAGCACTTTTTTTCAGCTATACATAAAGGCCTTTTCANT
Sequence 174
CGTCCGGTGACCCATTAAGTATATTTCGTGACCCANAGTTTGAAAGAGATTATAGGTGTA
GCTTTGCTAGTTTGTAATTGATATAGAACAGTGACTATCAGGGAAGNTGAAGAACGGCNA
ATTGAATGTAAATCATGTCTGGATGGTGAAGATTCTAAGAATGCANCTAGGGAAAGGGCT
GCAAAAAGAAGGTGGCAGACTAATGTAGAATGGTGCAACCAGATGAAGACATGGGTGGCT
TTAGGAATTCCAAAGTGGCCGTGAAGGCCAGGCACGGTGGCCCACGCCTGTAATNCTAGC
ACTTTGGGAGGCCAAGGTGGGTGGATTGCTGAGCTCGGGAGTTCGAGACCAGCCTGACCA
ACCAGGTGAAACACCATCCCTACAAAACAT
Sequence 175
GGCGGCGGCGGCGGCGGCCGGGACCCAGCGGGCCAGGTGGGGACGGCGCGTNGCGGG
TGCGGGAGATGCCGTGCGGGACTGGGGCCACNTTGAGCCGCCCGNCTCGTCCCCGCCTTC

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TGTGGGAAGGATGTGCGCGCGGATGGCCGGTCGCACAACAGCGGCCCCTCGGGGGCCCTA
CGGCCCCTGGCTCTGCCTCCTGGTGGCCCTCGCCCTGGACGTCGTGAGAGTGGACTGTGG
CCAGGCTCCCCTGGACCCTGTC

Sequence 176
GAGCTGGCTGGTGTTTGAGCTGTGGCAGAAGCACCTGGGGCTCCAGGGAAGCANGCTGGG
AACTGCAGGACCTTGCTCAGCCAGGAGCACTTCCCCCTCCTTGAGGCAGGAATACTGAGG
TGCCTCCCCACAGATGGAGAANGTGGAGAGGAGGATGGGCCTCAGGAGCATCTCAAGCCC
CAGTAGCAGGANAAAGAAAGAAAGAGATGCCTGGTTTTCACAGACTGGTTCCTGTGGCTG
GGATGACTGCATCCTTTTTTTTTTTTTTTTTGAGACGGAGTTTTTGCCTTTGTCGCCCAGG
CTGGAGTGCAATGGGGTGATCTCGGATCACCGGAACCTCCGCCTCCNGGATTCAAGCAAT
TNTCCCGCCTCAGCCTCCCGAGTAGCTGGGATTACAGGCACGCACCTCCACCGTNCGGCT
AATTTTGTA

Sequence 177
CCTTGTNAGGGGACACAAAGAAAAATTGAATAAACTGTATGATTTAAAAGATTATCGGGA
GAGTTACCTCCCGATATAAAAGGAAGGATTTACAGAATGTGACCTAAGGTCTGGCGTAAA
TGTGCACCGGAACCGAGAAGGCCCGGATTGTCATGGACGATGAGATACACCGGAATATCA
TGGACATATTCTTTAAAGCGCCCTTTATCTTCAAATGCGGCACGGAAACCGGAGGCTTTG
AAGAACTCAAGGAAGCGCGGCACGATACCGCCCGCAATAAACACGCCGCCAAATGTCCCG
AGATTGAGCGCCAGATTGCCGCCAAAACGGCCCATAATGACGCAAAACAGCGACAATGCG
CGGCGGCAATCGGTGCAAGCTGTCAGCCAGCGCCGCGTTCGGTAATATCTT

Sequence 178
CACGCGTCCGACCGGAAATGCTGACCTGACCTTTGACCAAGTACGNGCGGTGGGGGGGGG
GGACAAGTGGGGTGGTGGTATTAACTGGCTCCGGTGGGTCTTCAAGCCCCAGGAACCCTC
CAAGGGGGGAAACAAATGGAGGGCCCTAACGCAAGAAGCTTCAATCGGTCCCTTGGACTGG
GCTTCTTTCGGTGGGTTGGTGGGTATGGCCCTGGGCTGGCCTTTNCCTNAATCTTTCCTT
CCCTNCCTGGGGGCAATCTGGCTGGGTGGCCAAGTGGCTTGCCCCGGCAACAACTTTGGC
TGGCTGGCTTACGGTCAANGGGTGGCCCCTGGCTTGCCCCAAGAACAAAGGTGGCNTTGC
TTTGCCCCCGGAAGGGCCCCTNGTAATTGCCCGGCCCCGGGCCAAAAAAGCCAAGCCACC
TTCAAGGGTGGTTTCCCAAGCATTTTTAATTGCCCCCCCAAGCAACCCTTAATTGCCCAA
CCCTTGTTCTTTCCCCGGCCCAAAAGAACCCCCNAACCCCCCCAACCCAAGCTTATTGGA
ATTTTCCCAAATGGGGGCCCCCCTTGGCCCTTACAAAACCGGGGGTTTACCCCTTTGGGG
AGGGGAATTAACCCCCTGGGGAAGGAAACCGGTTTTGGACCANGGGGAAGGTAAGGCTTT
AAANCCTTGGGGTNGGGGCCCAAAAGGGCTTCCCCTAAATTGTTAACCCCCCTTGGCNTT
TT

Sequence 179
CGTCCGGAAAACTGTTCATCTACTCACTGTAGTGCCCTCCTTGAAATGTGTGTTTGTTCA
TTCAACTAACAATATTTGGGGATCCCTGTAGTAAACACTGTATGAATTTTACACAGTCTG
GCCATCAAGAAAGATCACGGAGTATATTCTAGATGGGGAGGCTACTAAGTGAATAGGAAT
CACCACGCTGGGCTGTTTATTAGGTACAGTAATAAACATAAGTACTGGTTGCAAAANAAA
ANAANAAAANAAAAAA

Sequence 180
CCNCCGCGTCCGAAAAGACAAGACAGCATACTGTATTTTTCCTCTTAAAATTCAATGTTA
CAATTAAATGATTGTTNTCTGAGAATAAGTTAGCTTCAGCTTTCTAATCGATGTGTTCCC
ACATCTACAAATTGATATGAAAAATTATTTTGAAATGCACACTGCAAAATGGTGAGAATA
TGAAAGTTACCTGGGAATTAAATCAGAACTGTCTCCATATGACTATTTCCAAGTCACAAT
CATAACTTTCTTAATAGCAATGGTTATATATGTGGCCAGATAGTATTCAGTTTCACAGTA
ATGTCTCGGTCACATAAAGATAGCANAGCATAGACATAGTACAACAATTTATTATTTCTG
CTGATTGCCAAATGTGCATAAAACTATAAAGATATATTTTCCAGCCCAGGTGACAGAGAC
CCTGTCTCCCNTTTNAAAANCTTCATGNTAAAGGTGCGGCCGCTAGACTAG

Sequence 181
CGCGTCCGCTAATCAACTTTTAAAAATAATGTTTTACGGCCGGGCGCGGTGGCTCACGCC

TABLE 1
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```
TGTAATCCCAGCACTTTGGGAGGCCGAGGCGGGCGGATCACGAGGTCAGGGAGATCGAGA
CCATCCTGGCTAACACGGTGAAACCCCGTCTCTACTAAAAATACAAAAAATTAGCCCGGC
GTGGTGGCGGGCGCCTGTAGTCCCAGCTACTCGGGAGGCTGATTTTTTATTTTTTGAACT
TTTTTACAGAGAAGGGGGGGTCTCCCTATGTTGCCCAGGTTGGTCTCAAACGTTTGGGCTC
AAGTGATCCTTCTCACCAAGAGTGCTGGGGATTATAGGCATGAGCTGCTGTGACCGGCCC
AAAATCAAATTTCAAAACTAAAAAAATTCTCAGATAATTAATGAACCTACGTGAATTAAT
CTACAAATTCCAGTTTGAAAAACACTAAAGATAAACAACTGTCAATGTGGGAAACTTAAA
AAGTANGTTGGTATTTAGGTTATTGGTTAAAATGGGGGACCGACTGGCATACACAGTCCT
AAATATTTAAGTCTTAAG
```
Sequence 182
```
CCCTATCTTNCGGTACTGGTGGGCCAAATTCCTGGGACCAGGTCAAGGTGGGCTGCCTCA
GTAAGAAGGAAGGACTGGAGAGTGCCCATTTCAGAGGAGCAGGCTGGTGGGGGCCAGCCA
GAAAGTAGTTCCCTTTGGGGGGAAGATGTTGGACCTTTATTATTTGTGGTAACCAGCCGA
GGCTGGTTGTCAGGACAGCAGGTGAGCCACTTTAGGGAAGAAAGTGCAGGGGTGGGTGGA
TGCCCAGATTACCAAGGCCAGCCACCCTGATGGGGTAGGGTCTGGTTATCTGTGTTCAAG
AAGCAAATCCCACCCCAGCCCCAGCACTAGCTCTCTATGTATGTATTTTCCCTGTACAAT
GTTTTATAAAAGAGATCATTAATTTAAAAAAAAAAAANAAAAANA
```
Sequence 183
```
TCGTCCATTTACCTCACTTATGGGGTAAAAGGTCACTTCAAGTAAGGTTAAAGGTTTTCC
CTGGCAAAGGACCTAACCAGAGCCCCNAAGGGGGGGAAAAAAGGAGGTCACCTTTGGGGA
GGTACCATGGCCCNTTTTGGTCTGGCCCNTTGGGCNTCTTCAACAACAAAGGAATATTTT
ACCAGGCCCTTTTGGAGGCCTTTGGATAATTTCTTAAGAAATTTGGTTACCAGGAAGAAT
TTAGGCTTCNTNGGNAAAAAGGAAAAATTAGGACCTAGGAAAGGGAATTAAAGGGGGNAA
GGGGAAATCAATTAAGCNTTAATGGAAAGGGGGTTTTACTTCTGGCAATCAAGAACCGGC
TTTTTCNTAAGTTTCNTAATGGAACTTTAAACCGGTNCCTAATANGGGCTNGTAAANGGG
GTTCTCNTGGCGGTGGNAAACCACCTTTCTTTTTCCTNGGGCCCTTCCCTTTTCTGGNCC
CCCAATTTNCCCTTCTTTNAAACCCTTCAAAGTTTGCCCTTGGAGGGTTTTTAATTAATT
CCCCCTTGGTGGCCANTTCCCTTGGGGGGCCAATTGGGTTTCAATTTCCANCAATTANTG
GNAAAAACCAAANTCCAAGGGGAAGGGACCCCCTTNGGGCTTAANTTTTTCCTTTTAAAT
CTTCCTGGGAATTTTNGGATNGGGGGAAAAAAAAATAAATTAAAATTCCTTTTTGGGGCG
CCCTTGGCCAAGTNGGGGGGGGAAAAATAATTTNGGNTTTTNGGGGGGGGGGGNTTTGGGGA
ATANCCTTACCAAGGAACCCCTTCCTTGGATNCCTTTTGGGGGGGTCTTTTCAAAAAAT
```
Sequence 184
```
GCGTCCGGTTGTAGTTTCCCTTCCCATTCTCTTGGTGGCCCTGGAAGCTTCTAGGCACAA
GTGTGCCACCCTGATTATTCCNACCACTCCATCCAACTTTTCTCTCTCTGTGGGTGTCTG
CACCACAAGCTGCCTACCCTCCAGGTGCCTCAATGGTCCGGCCACCAGTTGTGCCTCGGC
GCCCCCGGCCCACATCAGCAAGTGTCAGGCAGGCCTCCACCCAGGTGCCACGCACGGTG
CCTCATACCCAGAGAGTAGCCAACATTGGTACTCAGACCACAGGACCCAGTGGGGTAGGA
TGCTGTACACCAGGCCGGCCGCTCCTGCCGTGCAAATGTTCCTCAAGCAGCACATAAGCA
CCTATCGGGTCCAGGAGCCGGCTTGTGCACATNCCAGGACAGGAGCCCCTGACCGCGTCC
ATGCTGGCTGCGGCGCCCCTGCATGAGCAAAAGCAGATGATTGGGGAGCGTCTCTACCCC
CTTATCCATGATGTCCACA
```
Sequence 185
```
GTCGCCCCGCGTCCGGGCATTTGTATTTTCAACAATTGTTCTCAAATTTAGAAAAGAGAC
ATCGCAAGATGGTGAAATAGGAAGCCCTGGGCCCTCCTTCCCTCCACAAACACACTGATT
TGACAACAGTTCATGGACAGATTCCCTTTATAAGAAACCAAGAAACTGTTAAGAGGCTCT
TATACCCCAGGTGAGTGCAAAATCATCCACATCAAAGATAGCTGGGAAGTTCAAGACACC
TTCTTTCCGTAATTTCTAAACTGGCACAGTACTATATGATTGAGATGAATCTCCCCACAT
CCAAGCTTCCTGCTGGGGAGGAGAGGGGAGGGTATACCATTATGTCCAATGTTCCAACTC
CTCTAGGAGCTACCCAGGTAGGAGGTGGGTCCAGCTCTGTCAGGCTTGTCTTAAGAGCAC
TGATTGAGGGTCTGGTATTCTCTAAGTGGCCCAGGACCCATAAGAGCAGTGGATGGTGCTG
```

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GGGNTNNGNNGTGGGTTACCCATAACCCCCTGGTTTTTGG
Sequence 186
TCCGAAGCAGTGAAAATAGTGTTTGACTCCATTGACAACCTAGAGGCGGCTCCTCATGAT
ATCGGCTACGTCAAACAGGCCATGTTCCACTATTTCCAGGTGCCAGATCGGCTAGGGATA
CTCACTCACCTGTATAGGGACTTTGATAAATGCACGTTTGCTGGGTTTTGCCGGAAAATT
GCAGAATGTGCTCANCAGGGAGACCCCCTTTCCCGCTATATCTTCAGGAAGGCTGGGGAG
ATGCTGGGCAGACACATCGTAGCAGTGTTGCCCGAGATTGACCCGGTCTTGTTCCAGGGC
AAGATTGGACTCCCCATCCTGTGCGTGGGCTCTGTGTGGGAAGAGCTGGGAGCTGCTGAA
GGAAGGGTTTTCTTCTGGCGCTGACCCAGGGCAGAGAGATCCAGGCTCAAAACTTCTTCT
CCAGCTTCACCCTGATGAAGCTGAGGCACTCCTCCGCTCTGGGTGGGGCCAGGCCTAAGG
GGCCAG
Sequence 187
CGTCCGCGTCGCTCCCCTGCTCGGGGTCAGCTAGTGTCCGCTCTGCTCGGCCGCGGGCTC
CCGGAGGACTGCAGGCAGGATGACCGCAAAAACACGGGTGATTGGTGAATGGAAGTTGCT
ATGGGCCTCTAAGGGCCATCCCAAGCCCAACCCAACGTTAAACGGTCCACAATCCACCAA
GGAAGTCAAGCTTTTGACACAAACTGCTGAAAAGCTGGGAGGGTTTCTTCTGAAAGAAAG
TTTCTTTTTTCAACCCTGGGGGACACTGGTGCCCTTTCCACAAGCCAGGGAATTGGGTTT
ATGAAGCAAGCTTGGCTCTAAGGGGGGTGACCTCAAGATATTTGCTGGGGGGTTGTGAGG
TTTGGTGGTTCTTGGGAAGTGTGTCTCAAGCTTTGGGGGCCCTGGAACTGTGCTTGAAGT
GCCCTCAGGCCTGTGCCCTTCTGGGGCCGGGGGTCTTGTGGGTGNATNCGCAAGCANGGA
AGCCTGGGGGGCCATTGGTCCATTNAAGAAGGCACCCCGGGGCCAAACCTTGCTTGGCTAT
ANTATTCCAAGCCTGCTTCAACCCNTGGGCAGGCTTT
Sequence 188
TCGACCNCGCGTCCGGCTTCGACGCCTTCCCTAACATCGAGAAGGTGTCCAAGATCACGT
CTCCCGTGCTCATCATCCACGGCACGGAGGACGAGGTGATCGACTTCTCGCACGGGCTGG
CGCTCTACGAGCGCTGCCCCAAGGCGGTGGAGCCGCTGTGGGTGGAGGGCGCCGGGCACA
ACGACATCGAGCTCTACAGCCAGTACCTGGAGCGCCTGCGTCGCTTCATCTCCCAGGAGC
TGCCCAGCCAGCGCGCCTAGCGGCGGCCCCAACCGGCCGGACCTCAGCAATAAGGCGGCC
CCCGGACCTCACCCCGCGCCGGCCCCCACCCAGGGGCTGCATGTGGACCCCCCGGGCGGC
CCAGGGGACCCCGCCCCGACCCAGGGGCTGTGGACGATGTACAGGCAACAGAGCTACCGC
ACTCCTTTCCTTTTGGAAGCAAGAAGAAAATACGTGAAAACGGGAAATTAAAGATTTAAA
AATTTTTTNNNNNTNNANAAAAANNAAAGTGCGGC
Sequence 189
CGCGTCCGAAGCCTTTTGTCTCAGAGAATTTATTGTCCTGACAGCAGAGGCCGATGGTGG
GATCGACTGGCCCTTAATTTACACCAGCACTTGAAGCCGCCTGGAACCCGACTATCAAGT
GCATCACAGAGGGGCTGGCGGATCCCGGAAGTCAGAACGGGACACCGNCTTTCACTGTAT
CAGCGAGCCGTGCGCCTGCGAGAGTCTCCGAGCTGTAAAAAGTTCAAGCACCTCTTCCAG
CAGCTCCCAGAAATGGGCTGTGCAAGATGTGAAACACGTGACCATCACAGGCAGGCTGTG
CCCACAGCGTGGGGATGTGCAAGTCTGTGTTTGTGATGGAGGCCCGGGGGGAGGCCCGCTG
ACCCCACCACGGTCCTGTGCTCTGTGGAGGAGCTGGCACTGGCCCATTACAGACGCAAGC
GGTTTTGACCAGGGGATTCATGGCGAAAGGGTCCACCTTCAGCACCCTTGTATGGCCTTC
TTNCTGTGGGGACATCATCTTCATNGGATGGGATTCCCGGATGTCTTCAGAAACGCCTGT
CANGCATTNCCCCTGG
Sequence 190
CNACACATGCGGAATCATAGGCCTGCAAAGCTCCTGCTATTCACTATAACTCTGCCATGC
CTTAGGCACTTCCTAACCTAGAATTCTGAGTGAAGGACAACAATAACTAATACTTTTGAT
TCAGGTATTACAAAGAAGTTAAGAGTTCATAAGGCACCTAAGTAAAGTCACATTGGTTAA
GAGTACATGTCTCCAGATACTCTTACATTTGCAAAGNAATTGCATTTCTGNATCTATGGT
CTGTAAATAAAATTGAAGAGTTGNGAGAATAAAAGCATGTTGTCTTTGATAAATTGTTTT
TACAAAACAGGCACAAGAGAGGCTTGAAGGGTCCTTGCTATCTTTTAACCTATTTTATAA
TCTTTGCTGCATAAGAAACAAATATGCTTATTTACATTCTATACTTAAACATATTATCAA

TABLE 1

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ACTTTTATTCTGAAGATAATACACATGAAGGCTTTAAACTTTAATCTTCAATATATTTTT
TAATCTCCCTGATGAATTAGGGAAATAAATATTGGG
Sequence 191
TCTCCCCCTTCACCCTCCTTTTTTTTTTTTTTTTTGTTTTTTCTTAAAAGCATTTAGCTGG
GTGCAGTGACACATGCTTGTAATCCCAGCTATTGAGGAGGCTGAGGTAGGAGGATTGCTT
GAGTCCAGGAATTTGAGGCCAGCCTGGGGAACATAGCAAGAGCCTATCTTAAAAAAAAAA
AAAAAAGCATTTCAATTATTTTAAATTTTNTAATTACAAAACAATTCTTTCCTGTCTTAG
TTAGTTTACTTTTTACTCACAAAGTTCCTGGAAAGTAGTTATTACTCAATAATTGAATG
CATGAGTGTCAACTGCAAAATCTATGCATTATGTAGNGATTTGAATCAATTAGTCTTTNT
TGATACTCCAAAATTACCCTTTTTCGAGNGTCTTTATCANAAATTTGATAAATCGGAACT
T
Sequence 192
TCCGCCCCGTGAGGGGCAGCTGTGGTGTGGTGTGATGATGCTGGGATAGGCACTCAGATG
GTTGAGTCTGAGTTTGGCTCTGATATTATATCAACTGCATGGGCAGCTGTGGTGTGGTGT
GATGATGCTGGGATAGGCACTCAGATGGTTGAGTCTGAGTTTGGCTCTGATATTATATCA
ACTGCATGGGCAGCTGTGGTGTGGTGTGATGATGCTGGGATAGGCACTCAGATGGTTGAG
TCTGAGTTTGGCTCTGATATTATATCAACTGCATGGGCAGCTGTGGTGTGGTGTGATGAT
GCTGGGATAGGCACTCAGATGGTTGAGTCTGAGTTTGGCTCTGATATTATATCAACCGCA
TCATTTTGGGGAAGACACAATTTCTCAGAATTTTATTTAAGTTGTAAAAATAA
Sequence 193
ACACATTGCGGCACCGGGCTGGGCCTGGCCATCGTCAAGCATGTACTGCTGCGCCACCGC
GCGCGCTTGGAAATCAGCATGTGTGCTGGGCCATGGCAGTACGTTCACCTGCCATTTTCC
GCCAGCTCAGGTGACGCGCACACGGCTGGTCGGGAATGATGAATAACCTGAAGTGACGAC
GACCCAATGTGGGAGCTGCTGATACTTTGCTGTCTCCGCCCAGCAGTGGGCACTAGGCAA
GCGCCCCATCAGCCGCTACATTGGCCGACTTGCGCCTGCCTTTCAGGCCCTCTCGTCACC
CCTTATTGAACACACGGAACCTGCAAAACCCCATCATGGACCCTTCCCCTGGTATTACCC
TCGCTACACTCTTCGCCGATTTCGGCATGATTCTTTTTGCACTGATCCTGGTACTGCTCA
ACGGTTTCTTCGTTGCGGCGGAATTTGCCATGGTCAAACTGCGCTCCACCCGGGTCGAGG
CCATTGCCCACACCAACGGGCTGGCGCGGGCAGATCCTGCGCACCGTACACAGCCAGCTC
GACGCCTACCTGTCGGGCTGGCAGCTGGGGTATTACCCTCGCCTTCCTGGGTTTGGGTTG

Sequence 194
TGAAATCTCCTAATACACTGNGTTTTTATTGTTATGTATTCTATGTTTTAAAGCTCCTCA
AGGTATTGTTATTCTTTTGTATAATCAGTGTTTGTTTGGAGCTGTCTGTAAATTTTCCTC
TTTTTTGCTCTTTATTTTTTTCTTTCAACTCAGACCTTCCAAAATGGGATTATTTTTCTTT
TTTCTTTAGAGACATTTGCTTGATAACAGAATTTTAATTTGGCGGCTATTTATTTTTTTC
AGCACACTGCAGGTATTAAAACTACTTGGCTTCATTGTTGGTTTTGAAAAATCAGCTGTTC
TAATGTTGCTCTTTGAATATAATCTGCCTTTTTCTGTACTTGCTTGNCTTTAAGTTTTTT
GTT
Sequence 195
CGCTCCCTGGTTTCTTGTCTCATGAANAAGAAAAAATCCTAACTGTTCTTGATGATCTTT
AAGGCTCANAATGATCTGGACAGAGGTATTTACCTTGAAGCTCATAAAGCATAGGCCTTT
CTCACTTGCAGAGTATCTTTCTGAAGCTGGACTAAATTGGTTAAGGCCACTGTACTTTTC
CACTTTGTCTTCTTTCCTGTCACACACCCTATCCTTTCAGGCTGTGTTGGGATGGACAAA
AGCAGTTCTGGAGTCCTAAGGAGAAGATGAGTGGGATATGTTTCTGTGACCTGCAGTCAT
TTTAAAGTTTAGCTGTTGCTAGCTGACTCCATGTAAGAATACCTTCCAGGAATTTGATGG
CTGTGCACTCTGGCAGTGCAACTGGCATGGT
Sequence 196
CNCGCGTCCGGCCCTGATTGATGAAGCACAGTCAGTAAATCATCTCTTCATTCCCCAGTT
CTTAAGCCAACATCAGCAACACTGAGAGAACATTAGATTAAAGGCAGGTATAGAAGAGAG
ACTTAGGGTAACAAGTTAGTGGGTGCCTGAAGGCATGTGGGAAGAGATGTGGTAAAGGTG

TABLE 1
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TGCACACTATTCCTTACGTGACTTAAAATGTCAAGGGGCTTGGTGTGGTGGCTCATGACT
GTAAAACTAGAGCACTTTGGAAGGCCAAAGCTGGAGGATAGCTTGAGGTCAGAAGTTCAA
GGCCAACTTGGGCAATATGGCAAGACTGTGTCTCTACCAAAAAAAAAAAAAAAAAAAA
Sequence 197
CCGTCCGGAGAGGCTGTTNTTGATNGATACTCCAGAATAGACACGGGCCCTTGAAAAGCT
TGTACCTTTGGGGAAAAGTAGACCAGGAAAATCTCAAGCCAGAGAAGGACTATGAAGCTT
CTTTTTCCAGTTACACATGGAAATAAGAGGTCTTGCATGAGAAACCTAAATCAACCCCTT
TNTNTTTAAGCAGGTTTTGGAGTCTAAATTTATACTAATTGCATTGTGGAGCAGGTCTAG
CCAAGAAATTAACATGACAATCAGTCTCTAATCTGTCTGTCTATCTACTTACTTACCTAC
CAGTCAGGCCAAAGAGATTCCCACAAGTAGGTTAAAAAAAGTAAAGTCTGATAACAAATA
ATTAGTAAGAATGAATGAATAAATAAATAGCACAAAGGAACACTCTACCACAAGGAGGAG
TACTCATCACATCAAATGAGAGAATACCCTAAGAAAGTGAGATAATGCCAGCAATCTGAA
AGATATTTTACCNAAACGTGTTTAAAATGNTTAGGTTATTAAAAAAAAAAAAA
Sequence 198
CTAAGCTGTTATTTTCCCTAAAAATGCTTCCCTTGCATTTATACTTATTAAGAATAGATA
ATAGCTAACATCTATCCACTGCCTTTGATTCATGAGGCCCTCACGAATTGCCTCATTAGG
TCTCCGACAGTATGGTACAACTACTCTTTATATTTTACAGATGAAGAAACTGAGGCTGGA
CTGNTACCTTTTTGCTACACATCCTAATG
Sequence 199
AACCTGTTTTGTTAGATGTGAATCTAGGAAATACAATATATTTTTAATGTAAAAGNACTC
TTGCTTTACTTGTAAACTGATTTTCGTTTTTTTCCCCTCAGGCCATCAAGCCCTGTCGTC
CTATGACCAACAATGCTGGCAGACTTTTCCACTACCGGATCACAGTCTCCCCGCCTACGA
ACTTTTTAACTGACAGGCCAACTGTTATAGAATACGATGATCACGAAGTATATCTTTGAA
GGATTTTCTATGTTTGCACATGCCCCCCTGACCAATATTCCACTGTGTAAAGTAATTAGA
TTCAACATAGACTACACCGATTCATT
Sequence 200
AATGCAAGAACATCTGGATNAAATGGCTTTCTAGATGAGAATGGTTGCATTTTTTAATGG
CTATTCTGGTAGAAAGGACAACATGTGATATTCATCGACCCTCTTTCTCAGACCCTCTTT
ATAACAGCTAGTATGGAAAAATCTGTCTTTCCTATAAATATTTTCCCTGGGGAATGGNTT
CCCATTAATGTGTNGGATGCTTTGNTGTTTCTCTCTTGCACAGCGTGTATGTTGTCATCT
GCACTTAAGAAGTGGAATGGAATTGGGAATCCTGGTTTCTTGCTCTGGCTGGAGGTCCCA
AGTCCGCATTGTGATTTTGGGAAGTCACCGTTGTTCTTCTAGATCTAATTTAACTCATCT
GTAAAANAANNNGGNTNGAATTCCGACAATTTCATGGGTTTCATTAGATGCCAATATTTT
ATGACTCATGATCCCAGCNAGACTACACCTATTTATAAGGCTGGTTTTGCTTGTTTTTAC
TAAGAGCAACAATNACTACATATTTTCAGGTTACTCAATCATCAAAAAAATTATAAAATC
CATAAACACTTTGGATTTGAAACATTGCAACTTTG
Sequence 201
CGTCCGAAAAGCAGTCTTTCTTGCTCAAAGTATTAANGGTGAACAATTGAATAGAGTACT
GTGGTCGGGAGACTGATTTGAGACTGCAGAGCTGATGCTGGGTAGAGGGTCTGGACTTGT
ATTCATGTTCTGTCTCAGGGCAGCCCCTGGAGCAGGAGATGGCAGAGGCATTTACAGCTG
CAGAAAACAGGGAGGAATGGAATCTGAGGTAGCCCTGGCCTCAAAATTCAGGCCTGGCTG
TATCATTTACAGAGATTTTTCTGGAGGGAAAAAGTCTCATTTCTGAGGAAGGCAAGGNGG
GCTAATCATTATTAATTTTTTTTTAAACTTTTTG
Sequence 202
GCGTCCGGTTGAAGAGGGCAGGGAATAGGGGTGGGTGAGCGTGAACAGAGTCAGGCTGAT
TGCTGCAGGGTCCCTTGCATTAGTTCAGGTGAGAAGAGACCCGAGTAGGCCAGTGAGCCT
GGAGGAGAGGCTCTCTGTGTGTTTAATTGGTTTCCAGCTTTTTTTCTCTATTCATGTAGG
TTATACACGTTTCTTCTGTGAATTTTTATTTAAATGATTTTTTGTTGTTACTGGATCTAC
AAACAGCCCAACTCCAAGGAATCTGGCATCTCTCAGTGGAGCATACAGGTGACTTCATAA
TCTAACCGCATTAGTAACTGCCAAAATCGGAAGTAATTTCTCTCTGTTTAAAAGGCAGTG
AAACAAATTTTCAGAGCAGGTTTCTTCAACTGAACAAAATATTTTGGACCTTAAAGGTGG

TABLE 1
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TATGGCTCTCCTGATCAGGGAGGGACAGTGAAAGGTTTGAGCTCTGACACTGNCCAGCTC
TCTGGATACAACCAAGTGACTTTTTTTTTG
Sequence 203
CGCGTCCGAGTATATAGAAAAACCATTAATTTAGACTCTGTGAGATTAGGTTGCATGAAG
AAGGTTTTCTGAATATTTGAAGAGTGGATAAATAAATGTCCCCCAAAGCAATAAAATCAT
AATCCTTTAAAATATAGGAAAAATAACTAATGGGAACTAGGCTTAATACTCGGGATGAAA
TAATCTGTACAACAAACTCCCATGACACATGTTTACCTATGTAGCAAACCTGCACATGTA
CCCCTGAACTTAAAATAAAATTTAAAGTAATAATAATAAAAAAAAAAAAAAAAAAAAAAAA

Sequence 204
CGCGTCCGCTGGGAGGCTGTGGGGTCTGCCACCCAGCAGATCTGTGTCACGGGAGTGGCG
CTGTCACTCGTTGAGGTGGTGGCCTGGTTCCTTTGGCCTTAGGGAAGGACAAACTTCAAC
TCTGAGCCTTGATTGAGTGACCTTGGCCAAGTTACCTAGCTTTTCTGAGCCTCACTTTTT
TGGCNATTAGATGAACCAGAGGTTTATTTCACTCAGAATCCTGTTCACGATGCTGGTATT
TGGACCAGCCTGCGGGTTTATCCTGGGCTCTTTCTG
Sequence 205
CGCGTCCGAAAAAGGATGAGAAGAGAGGTGCATTCCAGAAGACAAAAGGTGTGTAGTATC
AGGATAAGGGGCTTTAAATATCAGATCCAGAGAACACTGCACATGTAGAAATGGGCTTGG
CCTGGGTCAGGGCATTGAGATTGGTTACATAATCTTTTCAAGGATTGGTGAATGAGTTGG
AGTATGTGTAGAAACCTACAAAGATGACAGTTTAATCTCATGTCATAATTTTTAGACAAA
TAATGTATTTTAAAACTGGGTGCAGTTCCTAAAGCTGTTCTAAAAGTCAATGCAACTGAA
TTTGGAATGTAAGCATAGGACAAACAGATGGGAAATAAGTCATGACCTCTGTGGGATAAA
GTGAGAGTTATCAAAGAATGTCAGTGTTTATAACAAGGAACAAGCTTGTTTTGGAGAATT
ACTAGATATTATGGAAAATTTTTTTCTTTTCTACATTTGGGTAACTATAGCTGAACTATA
GCAGATCATATTGACTTGGCAAAAAA
Sequence 206
CCNCGCGTCCGGTTATGTACTTTTGGAGACTTCCATTAGAAATATTGGCAAGTCCCTGCT
TCGTGGCCATAGATTTAAAAGGCCTATCAATTTTAAATGTTTCGGTCATTGAGAGCTAAA
ACATGTAACATATCACAGTGTTATTCACCAGAAATAAAAAATCAAGAGTCTGCTCAGAGT
AGGTTAATATGAGTTCCTTTCTTCAGTCCAGCTGATGGTTTTTAGTAAGATGAACTGCCA
AGGAGACAATGAGCACTGACTTCTCGATGCATGACTTCATCTTGTTAGAAGGTGGGTTGC
CGGGCCGCGGTGGCTCACGCCCGTAATCCCAGCACTTTGGGAGGCCGAGGCGGCCGGATC
ACCGAGGTNGGGGGGATCGAGACCATTCTGGCTACACGGTGACACCCCGTCTCTACTAAA
TATACAAAAAATTGCCCGGCCGTGGTGG
Sequence 207
CCNCGCGTCCGATGAATAGTTAGCCCATGATAAAGGAATAAAAGGATGAAGAATATTTGA
AGAGAAATAAATCTTCCTCACTCCTCAGGTTCCCTTCCATGTGCAGGAGCCTCAACCTAC
AACTAGCAACCTTATCTCCTGACTCATTCCTCTCTAGAGGAGGAGTAAATTAGTCAACTG
ATATGCTCTGGAAGAAAAACCCA
Sequence 208
CGTCCGGTCTTTCCTCCCCCTAAATAATGCATTACAAAGTGGAAATGCAAATTTCCTGTG
CAAGCTCTAAGTAGCAGGTGGTATTTCCTTAATATATTGTTTTTGACCTTTGGGGAAATT
GGTATTACGAGCTGACTTTGGAAAATTAAAATAGCATCAAGGTCCTACATTTTAAATAAA
ACAATCGATATCTTAATTTTTAAAATCAGACTAGATTACGATACCAGGAAAAGACATACA
TATTTTGCTTTTATGTGTTAAAGTTTTGTAATTCAGGGAGGACAAGAAAAGGGATATGGT
GCAGCTGAACTTTCTAATTCACTAAGACAGGAAAAAAAAAAAAAAAAAAAAN
Sequence 209
CGTCCGGGAAAAACAAGGGTTTCCGCCAACAGGCTGAGAGCAAAGGAGGACGCAGGAAAA
CTATTTTAAAAATTGACCCAAGAGTTCAAAAGGCATATGGAAGCATTTAATGGGGGTGGG
AGGTATCCTTGTAATAAGAATACCATGCATGTATTCCCACACTGCTCTTGGTGGTCTGCA
AAGTGATTTCATATGTATTTTATGTCAACACCAGCACAATGAGGTAAGTAGGACTGTATA

TABLE 1
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CCTCAGAGGCATTTGGTGATTTGTCAGAGTGGAGTGTAGTGTGTTGGTGCCCAGATTTGA
ATAGGATCATTTGAGTCTGATATCATCATGTTGCCCACCGCCTACTCAGCCTCTACACCC
GATGAGGCCAATCTGCAGCTCACTACAGTCAATAGAGAACAGGCAATTAACCCTTAAGTT
ATATTTTAGAAAGATTTCTGTCTAAAATAGATAAACTTGAAAGTATAGCTCTTCAAAATA
ACGTATTCCTGTGTTGGCAAATATTTTCCAAACTCACAATCAACACATAGGTGTATTTCT
TAGACTACTAGAAGTGGGGACTTACCCCAA
Sequence 210

CGCCNCGCGTCCGGGAAAAACAAGGGTTTCCGCCAACAGGCTGAGAGCAAAGGAGGACGC
AGGAAAACTATTTTAAAAATTGACCCAAGAGTTCAAAAGGCATATGGAAGCATTTAATGG
GGGTGGGAGGTATCCTTGTAATAAGAATACCATGCATGTATTCCCACACTGCTCTTGGTG
GTCTGCAAAGTGATTTCATATGTATTTTATGTCAACACCAGCACAATGAGGTAAGTAGGA
CTGTATACCTCAGAGGCATTTGGTGATTTGTCAGAGTGGAGTGTAGTGTGTTGGTGCCCA
GATTTGAATAGGATCATTTGAGTCTGATATCATCATGTTGCCCACCGCCTACTCAGCCTC
TACACCCGATGAGGCCAATCTGCAGCTCACTACAGTCAATAGAGAACAGGCAATTAACCC
TTAAGTTATATTTTAGAAAGATTTCTGTCTAAAATAGATAAACTTGAAAGTATAGCTCTT
CAAAATAACGTATTCCTGTGTTGGCAAATATTTTCCAAACTCACAATCAACACATANGTG
TATTTTCTTAGACTACTAGAAGTGGGGAC
Sequence 211

NCGCGTCCGGTTTCNTTGGGATAGATTTTACCTATGAATTCCTCCTTAGAATTCTGAAAT
TGCTCAGATTTACCCAAATGACAGCCAGTTTCTCATTTCACATTTGGGGGCTGTAGAATC
TTCCAACATTGAGAACCTGTTTTAATCAAAGGATGCTTTGTGGAATCCTGAATGAGGAAC
AGCATGTTGCAGGAAGAAGAGAAGGATCCTGATGCCCTAATGGGACTGATTTCCTTTTGG
GGGGCAGGAAGATATATATTCGTTGGGTGCTTATAAAAGGTTAATTCCAAAGATTGTGTA
TGGTTAAAGGACTGAAAGTCACACTTAGCCTCATACTTCACTTAGATGAAAAACAAAAGC
CTTCCTCTCCATTACCTTGTAAGATCTATTCCTTGTGTCTTGTGCTGAGTGGACCTGGAA
TAATGGATAGCCCTCACTGAGTACCTAGAAGGGGACTAGGGGTGGGTGATGAAAGGGGGT
TCACACCGAAGATCTAAGTGCTAGCTTGGGTA
Sequence 212

CACGCCCCGTGGCCTTGCTAGAGATCCATATAATGCAGTCATGCTGTTTCTTNCTCCATA
GTATGTGGGGCATGAGGAGGAGACAGGGAGAGGGTGGCTTCATTGNGCAAANGNGGAATG
GCTGTGCTTTGGGGCCAAGGAGATGCTGTCCTGCTGTAGCTGCTCTGTGAAAGGTCAGGC
CTGCCCCTNTGAGGCTCCCTTTATCCTCCTAAATTCTGGGGCATCTACATGACGCTTTCT
AGTCCACCTTTGCCTNCGCAGATCATGGCTACTAACCTGACCTTTGTCTGTACTTGAGCA
CCCTTCGCGATTTAACTTNCATGTANCGTCCGACTTCTAATATGGATTTGAATTTNTTGA
CTGTTACTGCTCANAACAATCACCCTTTTTTGAGCAGNGAGCTGGNAGGATAATTGCCGA
CAAATGACATTNGGANCCGTTTTNAACCACAGGGGGCATGGGG
Sequence 213

CGATCATTTTATTAGAGTNATGTATTTAAGAACTGATAAATCATGGGCTTACCTACACAA
TGTCTAGACACATGAGCAATGAACAAATAGCAAGGTCTGTGATATCTCATATGGCAATAC
TAGGACTGAGATTATTTTTGTTACAATTAAATAATTGTCAGTAAAAATCCACAGAGATCA
TTTAGAATGGGAAAAAAGTCTGATATATTTTTGTTTCAGATTATAATCATTAATAGGGTAC
CTGACAGTTTTCAAAGTTGTTTAATGTTTTTTAGGTCTTTAACCTTCCTAATCCTACAAG
GTGGTTACAATCCCACATATTATCCTTGTGTCAGGGGTCTCCAGCACCTGCCTTAGGGTC
AGTGATTTGCTAGAAGTACTTACAGAACTCAG
Sequence 214

ATCTGACAGCCTGGAACNGCACCCACACCCCCAGGTGAGAATCTGATGTTCTGGAGCATC
ACACACAACCACAGGTGAGCATCGGAGAGTCTGGAGCAGCACCCACAACCCAAGGTGAGC
ATCTGACAACCTGGAGCAGCACCCACACCCCGAGGTGAGCATCTGACCTCCCGGAGCAGG
ACCCATACCTCCAGGCGAGCATCTGAACCCATGGAGCAGCACCCACGCCCCCAGGCGAGC
ATNTGACCGAACAGAGCAGCACCCCCTCTA
Sequence 215

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TCCGGGAAAGACTCTGAGAAAGGACTCCTGACCTGGCTCTTCCAGAATGAGGATGGATTT
TCCATATGAAGGAGCCGGGGGGCAGGACCTTCTGGGTAGAGCGTGAAAAGAACACAGTATG
TGTGGAGAGCGGGAAATTGTGTTGAACTGTCTAGAAAACAGAGCCACAGGAATGCGTGTT
GAGGGCTTGGGCTGTACAGTGGAGAGTGCCCTCCCTGGCCAGGGAGTTGGACATTCATCC
CACCACAAGACCCCATGAAGAGTTCCTCAACAGCTCTGTGTCCTCATCAAACCTGTGTTT
GCAGAACAGTGGAGGAAGAGAGCTGAAGGAGGGGAGAGGCCCTGCACCTGCCAGGCCCTG
GCCTAGACTACAAGGGTGAGCACTGAGCCATGCTCTCGGGGAACCTTCACTGGAGTTGAG
GGCAGTGAGAATGTTTAAAAAAAAAAAAAAAAAA
Sequence 216
ACGCGTCCGATGCACACTTGTCTTTTACCACANGGGTGGGGCGTGGGANGGAGGTTTAGT
TTGGATAGCCACGTAAACGCCTTTCCCTGTGGCCTGCGATGTTCCACACCGTTTATGTGT
GAACTGGCTGCACCCGCGCCTCCCGGACGGGGCTGCCAGGGAGGAGGGCCCGGGAGACCC
CATCCAGACCCCGGCCCGCACGCTGCAGAGGTCTGCTCTCAGACATGTGGTGGGCTCCGT
GTCACGGGTAAGGGGTCGGGGTCTAGACGGCAACAGAGTGTCTCTCTCTTCCCGCTCCCT
GGTGTGCCCACCTCCCTGTACAGTGTTTCTGTTCAAGCTGCTGCAGGGGACGGGGCATTT
TTCCTCCAGACTCTATTTTCCTGCAAGGAAGAGCTGCTGTCCTTTTTCTTACTGAAGCCC
CTGATTCTGTGTCTGATGTTGCTGACCGCCGTGCTTGCTTTCTTGCCCGTGTGCAACTTC
CAATCCCAAGCACACGTGCTCACTTCCAAG
Sequence 217
GCGTCCGGGGAATGGCTGTNAGTNAAGTTAGAGGTAAAAAAATTTCATGTTAAGATTTTG
GAACTGGATTTTATTTAAAATAATGATGCGAAGCCATTGAAAGGTTTTTGGTGTGACAGG
ATAAATTTAAAATATGAACACACCAACGCATACTTCTTTTAAGAAAGAACCTGATTAAAT
TTGGGAATTTTAAAATAAAAACAGGAAGCATATCGTACTCTAATATAATAATTCAAGGGT
TTTTATTTTCCTAGAAGATCAAGGTCATGTTAATAAAGGGAATATAGTTTTTCTTATCTGT
GTTAAGACACTGATGACTTGCAAAGAAAAGTAACACTTTTGTGATATCCTTAGGTAATTC
AAGAGGAAACGCTTGAGCAATTACTGATGTTGTAAACTGGGATCAGAAGACATA
Sequence 218
NCCCCGCGTCCGCCCAGTTGCAAAGGAGATGTTGTAGGATGTTAGGTCTCAGCACAAGGA
ACCCAAACCTTCAGGGGCTCTCCTCTACATTATGCTCCCATTTTTCTCCCAAAATATCGA
TCTCCACCCACCCTAGACATAGAACTGGAGAATAAGTTCCAGTTTCATCCCTTTGCAGAT
CTTAGGGGGACCCATCAAATTCCCAGCCACTGGGTGAAAATCAGCAGCTTCTTTATAGGA
CCTGAGTTGCCTTCCTAGAGGATCCTAGAGGAAAAAAAAAAATCTTATCCTTCAAATACT
GCTGTCTTCCAAAATACGTAAGGACGCCACGGTGAATCATAGTGGACACCCTGCATTGGT
TGGGTTATTATTTATCCTAGAAGCTTGGGTTCTTGGAGCCCTAGCTTATTTAAGCAACAA
AGTCCCTCACAGCCCACAGGTGAGGAAGTGAGTGTAACAAAGAGATCATTGGACCTAAAA
TCAAAACACCTG
Sequence 219
CCCGAAAGGAGGTTTGTGGAACTTGGAGAGATCCAGGAGGTAACACCAAAAAGCTGCATT
TAGCAATGCCTGCCTAGCCCTCCTGTACAGCTCATGTTATTTTGTTGCCTTAGGCCATCT
TACACCAAACCATTCCTATCTCCATGCTTTTGTTTATGCTGTTGCCTCCTTTTAGAAGGG
CCACGCTCCACCGCTCTGCTGTGTTGATACTACCGACCCTTCCTTTAGTTCCTGTTCAAT
TCCCAAGCCTTCTGCCAAGCCTTCTTGGACATTCCCATCCCATGCTGACTATTCCTTAAG
CTAAAAACCCTTAGAGTTAATATGATACACTTGGCTACCTCATTGTTTCATATCAGTCAT
TCCTGTCTCTAGCTATAATCGGCTCAGCCAAGGAAGATATATTTATATGGACAATGTCTT
TGTGCCTTGGCTGTAAACAGTGTTGAATAATTAATCTCACTTGATGAGGTCTTACTTAAT
GATAGCCTCC
Sequence 220
CTCGTCCGGGCTGGATCCGTCTGCNCCACTGCAAGGGCAAGATGCAGCTGGTGGCTGACC
TGCTGCTGCTGTCGAGCGAGGCGCGGCCCGTGCTCTTCGAGGGCCCCGCCTCCTCTGGTG
CCGGCGCCGAGTCCTTCGAGCAGTGCCGGGACACCATCATCGCGCGCACCAAGGGGGTTT
TCATCCTTACCCACGACGTGCAGAGCCAGCTCAACATGGGCCGCTTCGGGGAGGCGGGGG

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ACAGCCTGGTGGAGCTGGGCGACCTGGTGGTGTCGCTGACCGAGTGCTCGGCCCACGCGG
CCTATCTGGCCGCTGTGGCCACGCCGGGCGCCCAGCCCGCGCAAGN
Sequence 221
GATTTTGGCTNCTGCAACCTCCGCCTTAGGGGTTCAATGCAATTCTCCTGCCTCAGCCTC
CAGATTGGGATTACAGGCATGTGCCACCGTGTCTGGCTAATTTTCTTGTAATTTTAGTAC
AAAAGGGGTTTCACCACATGGGCCAGACTGGTCTCAAACTCCTGGCCTAAAGCGGATCCA
CCTGCCTCGACCTCACAAGGTGCTGCGATTACAGGGATTACAGGCTGGGATTACAGGCAT
AAGTCACCACACCCAGCCTAAAAATTAAAAGTTTATACTGTATTGTTCACATTGTGATGC
AACTTTCCATATGTATTTCCAGAATCAACTATGTATCAAGGAATATTGAAAGCATAAAAT
GAGATCATGGTGAATTCTCTCCCATTGTCATTCTTGNGGTAAGGGAATGAATGGTGG
Sequence 222
CNCGCGTCCGAGTTATTNATATAAAGAACATTTTTCTGTTTTAGAGAGAACCCATTTATT
TGTGAAAGAAACAGAGTTTTGTTCTTATCCCTATAAACACTGCATTTGCTGTTTCTTCTC
TAGCTGATGTGACATATTAGGGAAGCAGCACCCGACTGGGACTCAAAAGACCTGGGTTTG
GAAACTTTTTGATTACTAGCTTAGCTGTGTGAAATCAGGCAGATGGTATAACTTCTCTCA
TTGATGATGTCAATCTTTTTAAAAATTTTCTAGCAGTGAAATTTTAAAAAATGAAATGTT
AGGTGAAACCTCAAACTTACAACAGTGGTAAAATTGGAAGGGTTCTGGATGGAGTGAGGG
CAGGGAGGGGGTAACTGGGCTGAGGGGCCCCTCTTCAGCCTCTTCCTCCCCTTCAACCGA
AGTCTGAAAATCTCTGGCTAATATGGGTGGATCCCTAAGATTTCTTTTGTACTTTTAACA
TACCGAAAAGNTATTCTAAAGAATTTTGGTATGGTTTT
Sequence 223
CGCNTCCGCCGAGCGCAGCAGTCTCCCCCTAACCTCAAAAGCCTCCTCAGAAGTAACCTG
GTATCAGTGGGCTGTGCAGATTCTTATAGTCTTCTTTGCCTTTATATATGAAAATAACTT
TGTTTTATGTTTGTTTTCACATAGGTGGAATTATACTGACTCTTACTCTGTGACTTGCTT
TCTTCACATGACAGTAACTCCTGGACTGTTTCTGTAGCAGCCACACAAGTCTCCTTTATA
TTGCCAATATCTATCTTTATCCCAAAGACAAGATGAATGTTCAAAAACGGTAATCCAAAC
TCACTTCTAAAAATGGGTGTGTGTTTAAAGAAGAGCTGCTCAGCTGAGGCAGTTTTGCTG
CCGAGGGGATTTGAGCAATGTCTGGGGACGTGTGGTTGTCACAACTTGTGAGGGGGCTC
Sequence 224
GCNTCCGTCAATTTGCATCAGTTGCCTTAAAGAATGGGGTAGTTATAGGAAGCTCACAGA
GAGGAAAAAAACTCTTCATGTCTACATTGCTTCTTGAACTGATTTTATTTATAAAAGAAG
AATTGTTGAGCTAGTGATAGAAGTTTCATGAATTCCCTGGTACTAATTATCAGTTAAATG
ACCTCTCTGAAGTCTCTGGAGAGCGTTCTGTGTCACTAATATTGGTGAAAATTTGAAACA
AAAATGCTCTCCCATTGTCCACATATTGCTTCTTTGAATTTGGTTTTTCGAGCCAAGAAC
TTAGGGTGTGAGAATATGTTTGTGGGGAAACCCACACAAATTTTATGTTAGTCTCTGTAC
ATTTAAATTTTTACCTTCCTGATTACTTACGTAAGACTAAACAATTTAAGTTTCTAAAAT
GCCATCACTTTTGCAAATAAAGGACTTTATTAAAGNTGATAAATAACAATNATGGGCCAT
CAGCTCCACCTATAATTAATATCCTTGCCTGGCACCCCTGGAAGGGACTTAGCTTNTT
Sequence 225
CNTCCGCAATTACTGCCTTAGGCTAGATTCCCATGAATANGAATTGCTGAGTCAAAAGGT
TGACACATTNTTTAAAGGTTAGATACATATTAGTCAAAGTTTTTAAGCAANATGCTTTCT
AAGCCTNTTTGATCTTTATAANNCATTGNTCCTTTCTAAAAATATATAACTGTCTTCTGC
GTNCCAAGGATAATTNTTTTTATTAATATGGGGCTTCTTGTGTCTACTTCCTCCCCTTTC
GTTATTTCTTCAAAATGTTTAACAAACTAATACATTTCAGAACACATTATGCTTNCATCT
TGTCACTATTTGCAGTACCTTGTATCTCCTGGACTTTATGCAATGCGTGTGTGTGCACAG
ATGGAATATGTTNCACCATTTGGCT
Sequence 226
GCAGTGCCGGCGGCGCAGTTGGGAATGGGAGTGCGCTTGCACAAGCGCCGACGAGCGATA
GCGACGCTATGCCCTCTCTTGCCCAGGCGCCGGGTGGCGCGGATCAACCTGCTCTCGCAG
CAGCCCCTGTGGTGGCCGCCGGTGATGATGCAGGAATCGTATTTCGACGGTGGNCAGCTT
CGCTTTCGATCAACATCTTCGNCGAAGTTCCGCGTGAACCGTNCGGNATCGACATCGTGG

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CGCTGGCATCTGCCGCTATACCAATCATCGAAACCGCGCTGGAAGGTCGGGTCCAGCGCC
CTGCAGAAGAGACGCCTCCAGCAGGACAAGGTGGCCTGCTCGACGAGCAGGCTACCCGAG
TGTCGTTGAACAAGTATCGCCTTGGGTCT
Sequence 227
CTGACACCCAGTATTGCCAACCTAAGGACTAGGAAGAAAGGGCTTACATGTTTCTTGCTT
TAATAATATGTGAATTAGAAAAGGTATTCAAGAAGATACAGGGTTAGAATGTGCATCTTT
CTTTTATGTACTGAAATGTTTCAACTCATATGCAGCAATGTGGTNACCTTGAAAGATGAT
TCCAGAGATTTCATGCTTCTGGCAGTTTCAGGTCACATTGGGGTGAAATTTGACATACTG
TAGTCATCCCCAAGGTAATAATGTTGATGAAATGGTATAAACCCTGATACATTCTTAAGC
AAAATGAATCTAAAAGTTTGTTTCAAAATTTTTAACGTTTTATGTTGCTCTGACTTTCCA
TATACTGATTTTTACATTACTTAGTGAAAAAAAAAAATTACCTTTTAGCTTNTGGCAACA
AAAACATTTTTGGCTATT
Sequence 228
CCNCGCGTCCGCAAGACAGGAGATTTCTTAAGGTCATATATGCACGATTTGCTTAAACGT
CATATAGCATAACTGGAAGAATATAGAATCTACCCAAAGCCTATGCTCTTTCTACTGNAT
TATTTGCTTATAATAGAGAATGCTAATCAGAATCACCTGAATAGTCTTGTAGAGGGTCAG
TACACAAGCCTAGGTCCTATCCTTCAGAGAGGTGAAATGGAGGCAAATATATTCTGAAAG
AGTTTCCCAGTTGATTCTGATGAGCACTCACAATTAAGAAGTGCTGCATTAAGAGCTGTA
CATGGTGGCTTATGCCTGTAATCCCAGCTATTCCTGAGGCTGAGGCTGGAAGATCACTTG
AGCCTGGAAGATCACTTGAGCCTGGGAGTTGGAGACCAGCCTCGGCAACGTAGTGAGACC
ATGTCTTTTTTT
Sequence 229
TTGGGAGATATGGCANGGTGAGAATGTTTGGGAAAGGAAGTAGAGACAGACATTGGATTT
TTGTCAGTCAANTTTCTTTTGATTTTAAATTATTTATTCATTACATTGTCTACATGGCAG
TTAATATTCTAAAACTATAAACAAAATTTAATATAGAAAAAATATTATGCTTTTCTTTTT
TGCCTTTGCATGCTCTTATTTCAAAATAGATTTAAAATTCATGGCATATTATACTAGAAA
ACAAGTCTGTCAATGATCTAAGCTTCTATCTTTAGATACTAGGAAAAAAGAGAAAAACCC
AAAGCAAGCAGAAGCAAGGAAATAAGAACAGAAATAAATGGAATTGANAAGAACACTTCA
GAAAATCAGTCAAACTGAAGCTGATTTTTTATAAAGATTA
Sequence 230
CCACGCNTCCGAGGAAACTGGCAGGGAAACAAAGTATCCCTGGAAGGAATTTCTTAAAGA
GGAAGAGGCAGATCCCTACAAGTTTAAAATCAAAGAATTTGAAGATGTTGATCCCAAAGT·
GAAATTGAAAGATGGACTTGTGAGGAAGGAGAAAGAGAAGCATAAAGATAAGAAGAAAGA
TAGAGAGAAAGGCAAGAAAGATAAAGATAAGAGAGAGAAAGAAAAAGTGANAGATAAAGG
CAGAGAAGATAAGATGAAAGCCCCAGCACCCCCACTGGTGTTGCCCCCAAAAGAGTTGGC
CCTGCCCTTGTTCAGCCCTGCCACAGCCTCCAGGGTCCCAGCCATGCTGCCATCTTTGTT
GCCAGTGCTTCCGGAAAAACTGTTTGAGGAGAAAGAGAAGCCGAAGGAGAAAG
Sequence 231
NCTAGACTCCCCTCTCGTATCATGGATCCCAACATCNAGGNATATGGNCATTTACGTGTT
GGGATCTGCTCTGCCATTGNACACAGCTATATTCNATTGCCCCGGGNGTTGTGTATNTTT
CCAAAAACGTTGAAAGGGAGGTTCAGAAGTATNCAGTTATTNGTATTATTAGTCGTTTTG
AAACTGAGTNGAAAGACTCATTNANGAAAGNTCCATATGCCTTCTTGTCTGTCTATGGCT
GGNNTGCTCNNGAGAAAAGTCCNCANTTATACAATTGTA
Sequence 232
TTTCCTTTTTTTGGGGGCGGGGTCGCGCTCTGTCGCCCAGGCTGGGGTGCAGGTGGCGCG
ATCATGGCTCATTGCATCCTCAAATGCCTGGGCTCAAGCAAACATCAGTTTTCTTATCTG
TGAAATGAGGATAAAAATGTCTCCACTTAAGGGTTGTTGCAAGGAAGGTGTTGCCTTAGT
CATAAAAGCTAGGGAAGGTGTTCCTAACGAAAAACAATTCGTCAGAGACATGAAGGTAGA
GGAAGAATTCACACATGAAGGGGGCTGGGGAAAATGATTTAAGAAAAGAAACAGGCCTGG ·
CGCAGTTGCTCAGGCTTGTGATCCCAGCACTTTGGGAGGCTGAGGAGGGTGGGATCACCT
GAGGTCGGGGAGTTCTAGACCAGCCTGGCCAACCGTGGTGAAACCTTGTCTTCTACTAAA

TABLE 1
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AATACAAAAANATTGGCGGGGTGTGGTGGCAGGTGCCTGTATTCCCAGCTACTTTGGAGG
CTGGGACGGGATAATTNCTTGAGCCCCGGAGGCGGGGGTTTCCGGTGAGCCCGGGATTGC
GCCCCTTGCACTACAAGCCTGGGGCACANAAGCGAGGACTNTGTCAAAAAAAAA
Sequence 233
CCACGCNTCCGGTCTCAAATCNCCTCAAGTATATTCAAAATTTGACCACTTCTCACCAGC
ACCACTGTCATTATCCTGATTCAAGCCTCCATCATCTCTCATCGTTACTGTGACCTCCTG
ATCATTCTCCTTGCTTCAGCCCTGGCCCCTGCAGGCAGCATTCAGTATTAAGCAGTAGAG
TTGTTTCTATAAAAATGTAGTCAGCTGGGTGTGGTGTCTCACGCTGTAATCCCAGCACTT
TGGGAGGCCAAGGTGGGAGGATCACTTGAGCTCAGTTTGAAGACCAGCCTGGTCAACATG
GTGAAACCCTGTCTCTACTAAAAATACAAAAATTAACTGGGCATGGTGGCGGGCACCTGT
AATCCCAGTTACTGGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCAGGAGGCAAAGGCT
TGCAGTGAACCCAGATCACACTACTGNTTTTNCAACCTGGGCACAGAGTGAGACTGCCTC
AAAAAAAAAAAAAAAAAAAA
Sequence 234
TCGAGGTCAAGGACGGTTATGGCCCGTAACTACCTGCTGCCGCAGAATTACGCCATCAAG
TGGACGCGCGGTGCTGAGGCCCAGATCAAGGACATCACTCGCGCCCGTAAGGCTAAGGAG
ATCAAGTCCAAGGAGGAGGCTGAGCAGATCCGCTCGCAGCTGGAGCACCTGGTCGTCCAG
GTGACTGTCCAGGTCGGCGAGAACGGTCGTCTGTTCGGGGCCGTGACTCCTGGCGATATT
GCGCTGGCAGTCAGGAAGGCCGGTGGCCCCGCCCTCGAGAAGCGGTCCATCGAGATCACC
AAGCCGATCAAGACCATCGGCAAGCACACTGTCCGGCGTCAAGCTGCATGACGCTATTAA
GGGTCACGTCACGGTCGAGACTGTTCCCGCCGCGTTGATTTGACGTACACGCAGANTAGG
GGGAGGGGCATCCAACCTGGGTGCCCTTCCTTTGCTTNCGTCACCACCGGCGAAAGGTAA
ATGACCGAAAGTAATTCTTATTACNGTGCTTAGGGGGGTTTCGCCGCGCCGGGCCGTTAG
ACTTAGTCTAGAAGAAAAAACCTTCCACACCTTCCCCTTGAACCTGGAAACATTAAAATG
AATGCNATTGGTGGGGTGGTAAACTTGG
Sequence 235
GNGGTAGCTTTGTGTATGTCGGGCACTTCNAGGAATAGGGTGCAGGAGAAACGTCTCAGT
GTCTCCCCTTCCGAATCTTGGCTTCTGGAGGGAGAGATGCTGGGGTGGGAGTGCTCCTTG
GTGGAGTACTCAGGAGCTTAGTAAAAGCAGAGGGGGGCTGGAGAGGCAGGCCTGGCCTGCA
GAGCCAGCATGGAGAAGCCTGGTGTAGGGCTCTCCAGCCTGCCAATTTACAGTTAAGAAG
AAAGGAGATATGTATATATATATACACACATACATACATACACACACATA
TATACACACATATATATACACACATGTATACATATATATACACACACATACACATATACA
CACACATGTACACATATACACACATATATACGTGGGGTGTGTATATGTATATATGTGTAT
ACGTATATA
Sequence 236
AACTGTCTAATCTCTTGACCTCGTGATCCCCTGCCTCGGCCTCCCAAAGTGCTGGGATTG
CAGGCATGAGCCACTGTGCCCAGCCATACTTTTTTTTTTTTTTTTTCTGGNGCATTTCTGAAG
TTAAATATGTTGAGTTCTCTGCCCATTTGTTCAAATTCTATTGNATTATTTCTGNNGGAT
TGACAAATGTTATGAACAATTTGGTTTCAAAATAGATTTTTCTATTTAGCAACTTTCTAT
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GAGTCATTAAGATGGCTGACCAATCTGTGCCATCTTTTTTAGTGACATTTTGTTTATCAG
TGTCTCTTTTGTGTATTTCTTTGATTTATATCTTGACAGTATTACATAAGCAGGAATAAA
AGAGACTTTGAGTGGGAATGTCTCGCTCAAATATAAATAACCTTATAAATACAATCTTTA
CTTCTCAGAGTCCTAAAATCTTCTTGGTTAGTCTGGTCTTCCTGGGTTGATTCAAGGTTC
TCGGNGACTAAATGGCAT
Sequence 237
TGTTNACCTTTGGGATTACACAATACTTGCAATCCAGCTCTGCCATGGGGGACATCATTA
CACAAAGCACTCCTCACCAGTAGTCAGATGGCACTTGATAGCTACAGGCATGTGAATATT
CTTTTACTGTCAACTTTTGTTGTGATTTCACCTAAAATATGATAAGCTCCTTGAGGATAA
AGGCTAAGTCTTACTTCTTCGTATTTCTGGTAACCGCTTGTACCAAACACCTGCCAAGCA
TTGTTGATTGCACCTATGAGGAGGTGAGAAAGTGCCAGGCCGTCATGCCCCTCTATACAA

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ACATGTAACAGTAGACTCTGGTTCATCAAGGAGTAAATGACATGATATGTGATAGACCAC
ATACATTCGTGGCTATAGATAGGGTGAGTAACTGTAACCATATCCAATTGTGAGCAAAAA
GTGTTTAATTGGGGNGGTTTTAAACTAATATAAAATTGGCTAAATCATCATTTTTCAAGC
TCTCGAATCATCTGAAGACCTTTTTTTATTTTTTAANANTTAGGCC
Sequence 238
CGCTCCGTTGCAGTGAGCTGAGATCACGCCACTGCACTCCATCCTTGGTGACAGAGCANG
ACTCCATCTCAAAAAAAAAAAGAAATTGGGTTGTCTAGGCACAGTGGCTCGTGCCTGTAA
TCCCAGCATTTTGGGAGGCTNCNTAGAANAATCACTTGAGCCCAGGAGTTTGAGACCAGC
CTGNACAACATAGTGAGACCCCATCTGTACCAAAAAAAAAAAACACCAGACCTGGTGGCAC
ATGTTTGTAGTCCCAGCTACTCAAGGGCTGAGGTGGGAGGGATCACTTGNNCCCAAGAAG
TCAAGGCTTCAGTGAGCCATGATTGGTGCCACTTGACTACAAGCTGGCAACAGANCCAAG
ACCCTNTTTAAAAAAAAAAAAAAAAAAAAAATNGGNTTGGGTTATAGGNGAAGTTNCCTGG
AAAAACCTTACAAAACAAGAACCATGTTTGGGGGAANCAANTGGANGGGGTNAAANTGNCC
NCTTGANGCTTNTCCTTTNGNGGNCCNTAATTAAAAAANGTTTCCCNGGTNTTGGCCCNGG
GNCCGGAAAATNCCTTNGAATTTCTTTAGCCCCTTTTGGGGNGGGCAAAAGCCAGGGNGG
AATCCCNCNNGGGNTCAGNGATTTTNGNAACCNNACCTTGGCCAAAAATNGGGGAAAACC
CCNGTTTTTTTTNTAAAAAATAACNAAAAANTTTNCCCCCTTTNCTTTNGGGGGGGGCCCA
CANNNNCCCCCTTTTTNATANANAANAANAANCCCCCCCCCCCCCCCCCC
Sequence 239
CATCTCAAAAAAAAAACTCACAACATATTTTATGTACACCTAGTATCAGTGAGATTTTTTA
ATAATTAGATTTATTATCTTCCATATTGNNTACAAAACTTTCTTCAACTTCATAAAAAGT
CAAGTAACATACTGTACTTACTTCTCTCACCTCATTTTAAAATAGTGGATAAATTGTCAG
ACACAGTGACTCTGCACCTGTAATCCTAGCTACTTGGGAGGCTAAGGTGGGAGGATTGCA
TGAGGCCAAGAGTTCAAGACCAGCCTGAGCAACACATAGAGACCCTATCTCTTTAAAAAA
AAAAAAAAAAAAAAAA
Sequence 240
TGTCGACCCACGCGTCCGCGCTCCTGTCATCTCCCTTGGGTCTTCATTTAAATGCCACAC
CAGAGAGGCCCTCCCTGGCCACCCTAATGAAAACTTCAACATCCTCAACCCTAACATTTC
CTGTCCCCTGGGTTATTCCTCCCCTTGGTATTTATCACCATTTAATGTACTATCTGGCCG
GGCATGGTGGCTCGTGCCTGTAATCCCAGCACTTTGGGAGGCCCAGGCGGGCGGATCACC
TGAGGTTAGGAGTTTGAGACCAGCCTGGCCAACATGGTGAAACCCCATCTCTACTAAAAA
TACAAAAATTAGCCAGGCATAGAGGCATGCCGCCTGTAATCCCAGCTACTTGGGAGGCTG
AGGCAGGAGAATCTCTTGAAACCGGGAGGCAGAGGTTGCAGTGAGCCAAGATCAAGCCAC
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AACAAACAAACAAACAAAAAAACCCAACAAACCCACCAAACATACCATATTTGGTTTCTG
TAAAAAAATAAAAAAGAGAGAGAGAATTTTTAAAAAAACAAAAACCATACTATCTAATTTA
CATTTTTAATCT
Sequence 241
CCCCGCGTCCGCTAAGGCATGTGAGCGCCTTGTAGGGCACGTTCTGTCTTCTGACTACAT
AAGCAACACTTTTGCGACCCTAAGTCACAGCACCCACAGCTTTTGGCAGGATACTTTAAA
ACAGAAAAAACACATCATTGATCCTGGCAGGATTTTTTAAGGGATTGTGCTTAAGAATGT
TTAACTTTGGTAATCAGAGACCACCACTGGTGTTTTTCTCCAAAATCACATCTTTAAGTT
AATTAATACTTGAAGTTAATAAATAATACTGCTCAAGTGTATTAGTAATGATGCCATAAT
ACCATGTGAATTTATGCTGATTCAAATGTTGTTTTTTTCGTTTGATACTCATATGGCCTT
CTGTTTTGAGGACTTCAGATTATTTAGCAACTGATTTAATCTGGTCAAGAAATAAACTTT
GCTTCAGCTGGAAAGCGTGAGGCTTGAGAAAAGCAAGGTTTTGGACAGGGGACCTATGAA
GCTCATGTTGAAACTTAAGTGTTTTAAGGCTGTATGGGAACTTGGAATGGGAGTGAAAAG
AACCAAGCCGTCTACTGNCAAGGTTTTTCCCTCCTCCCTCTAAAATTTATAAACCTCATT
CTTAGAAGTGGCAAAAAGTTGGGAACCTTTTCCACTGNTTCACTTCTNTTANTNAGGGGA
TTAAAGGNGGATNGGNAAANGGAAGTTTTCNTGGTTTTTTAAAAAAAAANNGNANAANGGG
GGGG

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Sequence 242
GNCACGGCGGGGCAACCTGGTTCCCCTGGGCGGTAGTCCCGGCAGCTGTGCTTCCCCCTT
CACTGCAGTGCGTGTTCAGTTGGAAACACGGAGATTTCACCTTTACTCCCTGGCTATAGG
GGGATGGTGAGAAGGGGGCTGCGTGTNAGGNGANATTCAAGGCATAAATCTTAGNTTGTC
TTTTAAAGAATTGNGTGCCGGGACGTGNTTGGAGGNTGGGTGCANANAGGAAGAGGCGAN
CTNCTGGAGGANGCAAAGGACAGGTCANTNTGCGNANTTCGNGNNNGATGCTGCTGANTGA
ACCCCNGNTGCTGTNGCCCCAACAAGAAAGGCTNNGCTNNGATCAAACATTTACTGNACC
TANAAGGCCACATTCTNGCTTAANNANNCCAGGAANGCNCNTTCTTGTTNCCCATTACCA
AAATCATTNACACTTGGTTTTTGGCCCNACATACCTTTCCTTTTNGACCANNGTTCTGGN
NNAAANGGCANTANACCNNNGNATNTNNCNTCATNACANGAATAAAAAGCCCNCAGAACN
CNACANANGNGCCCATCACTANNNNTANAGATNTCAAAAGGGGGCCCNGGATCCTTNACC
ANAGAANACTCTGGTCCNNAGNGNAAGAAAGNAAAACCCCNCNANANGCACTGGGACNNT
NTNATANTTCTNNTTNAAACAAAANCTTATAANNNAAAAAAAAAATTTTT
Sequence 243
AATTAATAAGCCTCCTGGGTGATTTGGCTGCAGGTGGTCCTGAGACCACACTTTAAGAAA
CACTAATCAAGAATCAAGGCCTTATGACTCTTAGTCCTGTTTCTTCCCAAAGGACTATGT
TGCCTCCCTACATTCGAAAACATTCCAAACAATACATAAGAGTCTTTGTAATTCACATTA
GTGCTCGTATTTACTGACTCAACAATTAATTCCTGATTGAGTCATTCATTGAGTAATTTT
CTTTTACTCACTCAGCCTCTGTGGTTTGCCAGGAGCTACAAATAAAAGATTAAAAACACAG
TCACACCTCCAAGGAACTCATATAATAGTAACAGAAGTAACTACCATTTCTTGAGCACTT
TATTTATACATACCGTCATACAGTTTATCTCATTCACCTATCTCATTCCCTGCCTTTCAG
TAAGCCTGTATACTATTATAACCGCATAGTTTGGGAATATTTCATATATATATATATATA
TATATATATATATATATATATATGTATAATCACATATATTCTCTTCAACTTGTNCT
TTACATTTAATATGTCTTAAAAGTATTTCTTTGTCAGTTCTTGCTTTATATATGTCTAGT
ATTTCTTTATAAGGGCTACAAGAAGTATCCCTCAAGCATTGGATATTTCAATCAAATTAC
CCTTGGGGGGGGTNGGGGGGAAAAAAATNNGGGGGGGGNTTT
Sequence 244
TCGCCCCGCGTCCGGGGAAGGCTAAGGCGCGAGGATCCCTTGAGCCCAGGAGTTCTAGGC
TGCAGTGAGCTATGATCACGCCACTGCACACCAGTATGGGCAACAGAGCGAGATCCCATC
TCTAAACAAATTTAAAACAAACGAACAAATGAAAAATATTGCTGTCTTAAGGTTGGGAAG
GGGCAGAGACCCCTTTGCTTGCTCATCACCAAGACACTTCTGTGAGGCCCCAGGGCTCTT
TGGAGAACGTTTTGAAAATCACGGTTCTAAGTAATTATAGTTACTGTGACTGAACTAATT
TAGCCCTAAGCTTCCTACAATCAAGATAGAGATACACTATGGACTGCATTTCTCCGCTTC
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ACATTTTCAAGATGAAGCTGCTCAAAATTAAAGCAGTGAGTCCAAGGGTTAATCTGNAAA
AAAAAGTACAATTTACTATCTCCTGGTTNCANACTTATAGACCCTCATAGGTGCATTGGC
TAATACAAGGGGCCACTAAACACATTGTGGCATTTACNGGATTTTATTGGTGAAGNGCTC
TATAAGTTTTATTGGTGCCAGGTAAAAGAAANGCCTCNTATAAAAAAATGGTGGNGGGGG
GTTTTTTTTTTNCCCCCCTTTTT
Sequence 245
TTCCGTACCTAAGAATTGTACCCTTTCATAACAGCACCACTTGGATATGTAGAAAGAGTT
TGTTGTGAGATCAGATGTAAAACAAATAAAAGTTATTCGTGAAATGATATGGAAGACTGG
GATTAGAAACTGTGGCATTCAAGAAGCCAGTTAAGCTGTTCTCAGAATTGACAGAGATTC
TAGAGATGGTGTAGTGCAGATGGTGTAGTGCAGGGATTCTCAGCCTCACTGCACATGGTA
ATCTCATAGGAAAATTTTAACAAGGACAGATGCAGAAATTCTTATTAAACTGTCAGGACT
GAAGTCCAGAGGTCACTATATTTTAAAAAGGTCTGCAAGTGATTGTAACATGCATCTATG
GAGGAAAACATCANCGTAGGAGAAAAAGGGAAAGAAACCAACTGGAGTAAAGGCTCTGTC
TTGAGCACTGTGCTGGCTCCTGTCATTCTCCATCTCTTTTTATCTTCATAGTAAGTGAGA
TGGGTTTGACAAATAGGGA
Sequence 246
GCGTCCGGNGTAACTTGAACNAAAGTATTCTCCTTCTTCTGTATATTTGTTCTCAACCCC

TABLE 1
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CAATTCCTCATAACTTTCTAAGTAAGTAGGGTGAAAAGAAAGTCAGGGCTGCCTAGGGAA
GCTACATTTGCTTCTCAAGGCTTGCACCTGCATATTTCATGCCCGACATGTTGCTGAACA
CAGCCGAGTAAAGTGCCAGAATAAAATCAGCTCTGTCCACGTGGTACCAGGAATGCTGCT
GAAATGAAGGTAAGTATAGGATTCCACAGGATCTAAGACAGTCCAGGGAACTGGGACCAA
TTGTGGGAAACCTCAAAGCTGAGCATATTTGAAGAAAATGCAGAGTAAAATGGCTATGGG
CTGCCGGGAGGCCTGGATTTGAGATACCAAGCACCACTGATATAAACACTGATGCTCAGA
AAAAGAAATGATGAGTGTGTATTTGTGTCCCTTGAGACCTAATTTAATTTATAATTATTC
ACCAGAGATAAGAGGCAAGGGATGTCTACTTGCTGGATATCTGAATTTACACAGTTCTCT
AGTCATTAGTATTTTTTACAAATATACCACTCAGACTAGGGGGGCAGAGGATCTGGGGTT
TNAATTTCAAGACCTGTCACTTATCTGCATGAATTTTGNAGCTTATAAGAACTTACAGGT
TAACCTTTTTT
Sequence 247

TGTCGACCCCGCGTCCNTNGTATTTATAAANATAATNCTGNTAGATAAATAAGTGATTCA
TATTTTGTCAAANCTATTTTAAAATTTCAATATTTAAAATATTNTTGAATCACTGGGTGT
CGNTAAGTGGCATCATNNATGAGATTTGATTCCATGTACCATATAATNTTAGATTGGTCC
TNTCTCACCCCTTTTAAACTCCTTCAAGCATTGCTATTACTGGGGTTGCCTTTGGGAAAA
CTTACTTCTAGATACTACCATATATCTGAAATAGTAGAGGTGGATGTTAATAAAATTCAT
AAAATNATCATGTATTACTTTTTTTTGATTTACCACTGGAAGGAAATACAGNCATGTGCAA
TATAATGACCGTTTTGGTCATNGAGACCCACATGTGTGACAGTGGTCCCATAAGGATGNG
GCTGAAAANNTCCTGTTGCNGCCTAGTGACACTGTAGCCATNGNAACNCCATAGCACGAC
ACGTNACTCACCTNTTCATGGTGATGCTGGTGT
Sequence 248

CCCCGCGTCCGATTTTGAATGTATTGAGACTAAAGTTCCTTTGAAACATTAAAGAAGATC
CATCAAACTGGCAACTGTATATAAGGTCTGATATCTTCTGGCACTCAGAGGGAGAGTTTC
TGGTGGAGGTGGAAGTGACTTAGGAGTCATCCATGAACATAAATGAGATCACTCGTGTAG
GGAAGAGTTAATGAGATTAGAGAGCCTTGGACAGAGCCTTGCAGCCCAAACCCATGAAAG
AGCAGTAATAGTGAGTGAATTACCTTCTGAGGCAGTGCAAAGTAGATAAGAAAACAAAAN
CTNNAAAAAAAAAAAAAANAANAAAAAAAAAA
Sequence 249

CCGCGTCCGCAGTGGTNGTGATCTCGTCTCCTGCAACCTCTGCCTCCCAGGTTCAAGCAA
TTCTCCTGCCTCAGCCTCCCAAGTAGCTGGGATTACAGATTATGTCTTGTGTTANNGAAA
TCATTCAATTTTTCACCAGAGAATAAGGAAAAGCAAATTAGACTGTGAATAAAATCTCCA
TGTACCCACTAGGATGACTACAATTCAAAAGGCTGACCTATCCAGGTGAAGATGAGAGTG
TGCAGCATTGGAAATTCTTACACATTGCTGGAGATTTAGAAGCTAAAGAAAGAGGACAAA
TGATTTGGAAGCAAAGATAAGAAGGAAGAAGGAGATGGGGTCTTGCCATGTTTCCCAGGC
TGGTCTCAAACTCCTAGATTCAAGTGATCCACCTGCGTTGGCCTCCCAAAGTGCTGGCAT
TATAGGCATGAGGCACCATGCCAGGCCTGTTTTGAAATTTCATACATATTTATAAAACAT
ATTTTCAGGATGAGAGAATATACCAAGAAGTTACATAGCATTGTGTATCTGTATAGAATA
AAA
Sequence 250

TCGACCACGCGTCCGGGTGAACGTGGTCACCAAGGCCATGGGTACCCTGGGGGTGAGCTT
ATCCTCCTGCAGCGTCCCTGGTTCCAAACCCACCTTCGAGCTCTCAGCCGACGAGGTGGA
GCTGGGCCTGGGGATCCACGGGGAAGCTGGTGTGCGCCGGATAAAGATGGCAACCGCCGA
TGAGATTGTGAAACTCATGCTCGACCACATGACAAACACCACCAACGCGTCCCATGTGCC
TGTGCAGCCCGGCTCCTCAGTTGTGATGATGGTCAACAACCTGGGTGGCCTGTCATTCCT
GGAACTGGGCATCATAGCCGACGCTACCGTCCGNTCCCTGGAGGGCCGCGGGGTGAAGAT
TGCCCGTGCCCTGGTGGGCACCTTCATGTCAGCACTGGAGATGCCTGGCATTTCTCTCAC
CCTCCTGCTGGTGGATGAGCCTCTCCTGAAACTGATAGATGCTTGAAACCACTGCAGCAG
CCTGGCCTAACGTGGCTTGCAGTCTTCATTACTGGGCGGAAAGCGGAGCCGGGTAAGCCC
CTTGCCGAGCCCCAAGAAG
Sequence 251

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GTCGCCCCGCGTCCGCAAGAAATGATGTTAGTAAAGATACTTTAATTGCGGGGAGTTCTC
TGTTGGCTGGTGAATAAGGACGTTCTCTTTGAGTTCCACCTTTCTTTGAGAAATTTTCAT
GTTTCCTGTACTTTTCCTCTATTATATCATGGAAACTTACTAAATCAGCCTGTGCATTCC
GCCCACATATTCCCTCATGGTGCCTTCCGGTCCTAGCAGCTGAGCCAGGGCCATCAATAA
ATCTTCTTCTTTTCCCCCAAGATATTCCTAGTTGCTTCTTTACTATTCATTCTTGTAATT
CCATTCATCTGTGTGTATCATTTAGGATGCTGGGCAGTTGCATCGCATTTCACCTAAGGT
CACATCCTGATGGGATTTGGTGGGATCCTAGAGCTGGCTAGGACCACTTGTGAGAGCTGA
TTGTTAAATTCTCCGAAATGACGTGACTCAAGTTGTTAGACTGCTTAAAGG
Sequence 252
CCGGTGAAACCTGGAGCTGAAGTGAATTCTCTTAGAGTATATTTTGAAACTGTACTAGGA
CTTTAAACACTTTTGGAATTTAAAACAGCCATAAAAATTCTTGTTATACTGAAGGAGTTC
CTGAGGCAGTGTGCCTCTCATTTTACCACCTAAAGTTGCCATAGAGGTCCAAGGAGACAC
TGCTGATAGCAGAAAGTCTTCCAGAAAGAAATTAGGCGACCCACACCAAGCATGTATGGC
TTTGAGTCTTACAGATGGCTTTTTAATAGTTTAGTCTCTTAACCTAAGGAAGTTTCTGAA
GTTCCGGTCAGAGAGTCTAAAAATTCACATTTTACCTAATAAATGATAATGAGGCTATTT
ATCTTGTCTGTCTGGATTTTTTCACTTGACATTTAATGAAATATCCCATATTACCTATAA
TTTTTATTTGAAG
Sequence 253
CCCCCCGCGTCCGAGATAATGCTGTTTGCTTCCGGCCGCTGTAAATCATAGGTGAAAACC
AGTAGCANGTGCTCACTCAGTGCCTCCCAGAAGCGGTCTGCGGGTCTCAGCTGGGCTGGG
GGCAGTTTTCATTGGGCAAGGCTTGGGCTTAGCTTCGAAGCANGGGCTGGGAGAGGATGG
ATGGGGGTGTGAGAGCAAAAGAAAGACCTGGCTTTGCAGTGATGGCANCCCACGTTCAAA
TNNNAGCTCACCACTGACCNGTCGNNTGACGNGCGCCAGGNGTTAGGAGACTGNAACTGN
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TCNTAATCCTCATACNCATGNCTGNNNACTNTACACTGTTCTACTTATCAATGACAGGTC
AAAAGTGTTATCATNTGTGACNTAGAATGAGTGAAGTACACNCCCTCTTGGAAACTATGA
ATGACTTAAAGAATCACCNTTTGCAAAAAATC
Sequence 254
GCCTTCGCCCCTGCCTCCTCTTGGCTGCGGCTGGTCATCTTCCCACCTCCACAGTGGGCC
GAGCTGCCAAACAAGGGGTACACATGTGCCCCCTGACATAGGCCAGGTGGTCTCTGCCCT
CTGTAGCTCCCATGAGAGAGGGCTCCTCGGACCGAAACAGGAGGCCACTGCCCTTGCGCA
CACACCGTGGCCGGGTCCTCCTGGGCGGAGCGCTTTCCGTGTGTGGGAAAGTCAAGGGCA
GCCCCGAGCCTCGAAGCCCAGGCTCCCAGCCCCGCGCCATGTTGCATTCCCGCCTCTACT
CCTTGGTAGGCTGGNTGCTTTGAGTGGTTCTTTTTAATTCTTTCTGTTGGTTTCTCCTTT
TCCTTTGCCTGGGTTTTGCTTTAACCTCTCTGTTGCAGAGATGCAGAGCACTCAGAGAGC
CTATTTCTATCATCGCTTTCCTATTCTCCACCTAGAACCAGNTGACTGGCCGCCCGAGTG
GNGTCTCTTGTGTGTGTGGTGCCGTCAAAGCTGTGCAAAGAAATGCTTCTGCCTAGGTTT
CTTCGCGCCCCCCCCTTGCTTGGCTTTTCCTGCCTGCTTACACCCCCGGTTCCTGATCTG
CCCTGGGC
Sequence 255
GCCCACGCGTCCGCAAGANAGCTCCTCAGATTTGTCATAGACTATATTTAAAGAAAGGCC
ACATTTTTCTTATTTAAAATGCATTAAACAATGCANCCAATTAAAAGAACTGAGNTGGAT
TTGTACAAAAGCAGGGACTAGGTCTGNTTTGTTCACTGCTATATTCCCAATGCCTAGAAC
CATGTCTGGCAAACATACTGGCATGGGAAGAACATTTCCATAACCCCTGAATGTTCTGTG
CCCCTTTCCAATTAATCCCTACCCTCAGAAGCAACCACTATTCTCATGCTTATTACATTA
GTTTTGCCTCTTCTTGACTTTCATATAAATGAAATCATACATCTAANAAAAAANANAAAA
AAAA
Sequence 256
TCGACCCCGCGTCCGATTTGATATAAATAGTTATGTTACTCATATAGAAATCTCTTCCCC
ATTACACACATACAAACATTTATCTATGAGTGGCTTATAATTGCAAATAAGATGTAAATC
ATGCTCATGATCATTGTCAAAATTGTGAAAGATTTTTTTTCTATACCTCTTTTAGGTTTGT

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TTTGTTTTTGTTTTTGATTTCCAGGTGGCATTAAAGACAAGAGGGAATAATATTCATTCT
TACTTCTACTCCCAAGTCACTAGTTTGCTGAATTTAATTGAGTTAAAGAATTGTATCAGT
CTTCTTGGAAGTCTAATACAAAACCAGTTCAACACTAGTTATTCATTCTTTGCTAATTCA
CCAGAATTGAAGGATGGATAAAATGAGAAAGAGAAGTAGTTCTTCATATTATTAAAATAA
AGAGTTAAATTAGACACTTTGTTGGACTCTTTGGTCTTAATAATTCCTACTCTTTTTGAG
GTCCAAAAGTTTTGTCTTTGATAAATATAATTTTAATGGG
Sequence 257
AAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGC
ACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTCACCTGGGGAG
TGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAAT
GTTGCTCTGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACA
AATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGG
GGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGC
CTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGC
ATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAAC
AAACAAATGCGGGTTTATTTCTCAGATGATGTTCATCCCGTGAATGGTCCAGGGAAGGAC
CTTTCACCTTGACTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTTCTTT
Sequence 258
GAGTCGACCCCGCGTCCGCTCTGGAGGAAGCATAGATTAGAATCATGATTTTTATCTATT
TTAAGAGAATAGAAGAACAGAAGGGGTTACAATCTTGCAATATTATGCAACTCTTCTGCT
CTAATATATCAAAAACTTGATGATCCAAGATCATGCAGAACAGCTGAGAAGAAATCAAAG
TAAACAGTGTACCTTGCAGCCAACAGATCCTGCCAATATGAGATTAGAACTCTCCATCCT
AGCAAAAAAAAAAAAAAAAAA
Sequence 259
CTGGTACCTGCGAGTCGCTGCAGCAGCTGTGGCAATTGTCACCTTCATCCAGGCCCATCC
CGCTTTGAGGGCCTAGAGAGAGTGGGCCAGAGGTTAACCCCCGATTCATCTGCCTCCCCA
CGCTGGGCATCTGGGTGTGCCAGGGCATTCCCCCGCTGGTCAGACAGGTTTTTGGGCCAG
GGCGGGGCTGACCAGGGTTAATTAGAGGGAACTGGCTAGGAGGAGCTGGGGAGGGGGCTG
GGCAGAGTCCAGGCCTNCAGAGCCCCTGGGACACAGCAGGTGTGTGCTGCCATGGGCCGG
GGCTTGAACTCTGCCAGACTCAGGCGCCAAAAACGGCGCTTGCGACCTCAGGTCCAGAAG
CCCCGGCAGCAAGCTG
Sequence 260
TCGACCCCGCGTCCGAAACTCTGTCTAGTCTAAACTATTATTCTATACTTCTCATCTCTA
TATGTTAAGGATTGATCTCCAAGATAAATTGTTTTTTGTTTGNTTTTTAGGGACAGGATC
ATGCTCTGTTGCCCAGGCTAGAGTGTAGTGGAACAATCATAACTCACTGCAGCCTCGAAC
TCCTGGGCTTAGGTGATCCACCTGCCTTGGCCTCCTGAGTAGCTGGAATTCCAGATGCAA
GGCACCATGCCTGGCTAACTTTTTAAAATTTTTCATAGAGATGGGGTCTTACCATCCTGC
CCAGGCTGGCCTCGAGCTCTTCACCTCAAGCAGTCCTCCTGCCTCAGCCTCCCAAGGCAC
TGGTATTGCAGGAGTGAGCCACCACGCCCAGCCCAAAATAATTNTTTTTTAAAGCAAGAT
GTAGAAAAGTGATTATAATATGTTTCCATTTAGGCAAGAAAAAAAATGGAGAGGACTATA
CCTGTACTCTCTGNACATAGGATCCACAGAAAACTTCTAATGGATGGTTATCCCTGNGGN
GGGAAACTGGGGGACAGGGAATGATGAAGCAGGAAAATTTTTACTGGATAAACTTTAGTT
CTGGTGGCTCTTTTTCTTCTATCATGNGNATGGTAACTT
Sequence 261
GTCCCGCAAAGCCTTTAAAAAGAGTCCGAATTTCACTTTTCACCTTTTGTAGATGTGCAC
GTGTAGCTGTAGAGCTCATACTTACGTTTCACATGGCATAGTTGATGGATATGTAGGTGT
AAAGTTTATGGTAGTGGACAGGCTGAGAATGGTGTATCTGTGACAAAAAATCTGATGGAA
GTGATATATTTGATATGAAAGTGAACATTTTCTTAGTTGGGTGTTATAACTTTTTTTTTG
GTAAATTGTTTTTAGTTTTTATCCTTATTTTACTTATGCTTGGCAATAGATGGTCTTTTT
TCCCCAAATCTTCTTCTGAATTCCAAGGAAACACTGTTTTAGCATTTATTTGATTACTTT
GGTTCATTCTTTTCTCCACTCCCATTTATTTGTTTTCCATTTTGTAACTTCTATAAAGCA

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GATAAAAATCTGGAACTTCTAGATCTGACCTTCATGCCTTGTCTTTTCTATGGTACTTAT
TCTTTCTGTCTCCTTCTCATTTTGGATTGGGCTTATGAGAGAAATCTTGGGGTTGATCTT
CCAGCTCACTAATTTGATATTCATTTGTGTCTCTTCAGTTACTTAGCTTGCCTGAAAACT
TTTTTTTTCAGCAATTGTGTACTTAATTTTCATA

Sequence 262
CCNCGCGTCCGTGCCCTGGGGCCCCCCTGGGCGAGCATACCCTAGGCGTCAGGCCTGGAG
GTCTCCTCGGTGCCTCCCAGCTCTTCTGTGCTCCTCACACTCTGCTCTGNGCANATTGGC
TGTATTTGTAGGTTACTGCCTTTTATTTCTCACATTTCTTTTTGGTGAGAGTATATCAAT
CAATCAATCATCCTCAGACCTCTATGATAACACTGTGCCCCACACACAAGAAGCTACTCA
ATTAATGTTTGTTTGTTGAAATGAGAGAAAATATTTGTCCTTAGTACAGAAAGAAGATGA
AGCCAACCTCTGATAGAAGCCCACCCATAGACTAGGGTGTTGAGCTGCCTTCCAA

Sequence 263
NCCCCGCGTCCGGTAGTTGCAGAAGCATGTTCTTGAACTTATCAGTCCTGACCTCAGATT
TCATCTTCTTCTGGTAGATGTAGCATACATCTCTGAGTGTTATTAGAGGACCAGNCTAGA
GCCTCATCGTACTCCTTCAGTTACTTCATAATCATCCAGCTCTTTATATTAAATGTTTTT
CTGTTTAAAATGGCAGCAATGTTTTTTATTTTTTGAAATGGTCCCTGACAGCAACAGATC
TTCTCGTGTTTAATTATTGAGTCTGTGCTGATTACACAGAATTAAGGATATAGTTTCTAA
AGTACTTCCATTTTTATATATTTTAGCATTATTCTGAAAGGCCTGGAAAAAAACTATTTT
TTATTCGATTTGAAAGTGAAGTGACATAGGTGGGTCGCTATAGCAAGAAATTACCCTGTA
TTTTTCCATCTCTATCATCACAGGCATCTCACAGAATTAGAAGTCGGACATTATTGATGG
ATATATTAGTCATGAATAATTAAAATACATTAAATATAAAATGGGTCAGATACGGGCAGA
TTT

Sequence 264
CNCGCGTCCGGGAGAAAAGAGTTTTATACCTAATTCTTNTGCAAGTGATTACATATTTTT
ATACCCAGGATGTTCAGCAAGATGAACTTTATTTTTTAGATGTATCTATGGNTTTTCCAC
CCATTTTATTAATTTTTAGAAATATAAAAGTGCCTTTAAAATTTAGCTGGGTTAAGATAG
TAAGTTTTAGGCTGAGGCAGGAGAATTGCTTGAACCCAGGAGGCGGAGGTTGCAGTGAGC
CTAGATCGTGCCATTGTACTCCAGCCTGGGCAACAAGAGCGAAACTCAGTTTCAAAAAAA
AAAAAAAAAAAAAAAAAAAAA

Sequence 265
GATCCTCTAAGTNCCCAATGATCNGAGAAGAAATATGAAAGGGAATTTTAAAATATTTTG
AACTGAATGAAGATGAAAATGCCACAGATAAAACTTTGCATGGGGNAGCTACATTAGTTA
GCTTAGAGGGAAATTTATATTTTTAAATTCTTATATTAGGAAATAAGTCTTACATAAATA
ATCTCAGCTTCCACCTAAGAAGTTCAAAATAAACCCACAGTAAGCNGAAGAAAGGAAATA
ATAAAGCTGAGAAAAAATCAATAAAGTTTAAAAGAGAAAATTAATAGATATCAATGGAAC
AAAAGTTGCCTTTTTAAAAATATCAACAAAATTGATAGACCTTTAGCCAGAATGATCAAA
AAAAAAAAAAAAAAAA

Sequence 266
CCCGCGTCCGCCTGAATTTCAGAGTCNGTTGAGAAGGTAGGGAGCAGGGATCTCTCAGAC
ACCAACATGTTCAGCTTTATTATAGATAAGGCTGAATTGATTTCCTGGAATNGACCTTAC
TTCCCCACCTCCAAACTGCAGGCCTTCCCCTTGCAGGTTCAGAACATGTTAAGGTAAGTT
CACTGCAGAGATAAACAGGGTGAGGACAGGCCAGTCCTAAAAAAAAAAAAAAGAAAAAAAA
A

Sequence 267
CCGTTCTTTTTCCNAAACTAAAGAATGCATAGGACATAAGTTAAAAGTTCATACATAACC
TGGCTTCAAATCCAGTTCTACCACTACCTGAAAACATCAGTTTATTTCTCATCAATGGGT
TGTTATAAAGTACCTAGCATAGGGTATTGCTTAAATGTTAATACTCCCAATCCTGACACT
AATGTTTCAGGGAAGAGTGAAAGAAATCACATTAACTCCACATTATTGAACATCTTCTGT
GTCAGGCTGAATACATCTTTGTATCCATTGTCTTCTGGTTGTTTAAAGACTAGTGTAGAA
GCCTGACATGTAAATCGGTGATTATATAAGATAGTACTGTCTTGTAATGTGTTGTGCTAG
AGAGGTTAAGTATTAATTATTATGGGAGCTCAGGAGAGGCACCCACTGGCTGCTGGGAGA

TABLE 1
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AGAGCAAAAACCTATATATAAAGCAATTTTTAAGATTTTGGTTCTATAAGGGTAGAATGT
TCGATCCATTAGTGTATTCCCAAAGTCCTATACACATGTCAAGATCGGGAAAGCTCACAC
ACACAATAATGCCCAAG
Sequence 268
CGTCCGGCCCCATGCCCAGCCAAGTTATGTTGTTTGGTCAATTTTAGATAATTAAAAAAA
AAAATCCTATGTAGTAACATCCTACTAGGAAAGAAGATAAACTCAANTATCCACTGAGTG
GTGACCTGAAACCAAAGAGACATGGAGGGGCAGCCAGTCAAAAGCCACTGCACTCCAGCC
TGGGCAACAGAGCAGGACTGTGTCTGGAAAAAAAAAAAATCTAGAAACATACTCAAATGT
AAACATAAGAACTTAGCATATGGTAAAGTTGTGACTGTGAGTCAGTGCAGAAAAGAATGA
ATCAATCAGTAAATGGTCCTGGGAAAACCGGCTATTTATTTTAAAATAATAACAAAATAT
GCTGTATATCATCAATGGATTAAAGATTTATATACCTTCAGCATATGTCCTTAAATGTTC
TAGAATAAAATATATGAATTCAATGTAATTTTTTGATGTGAGGGAAGGCCTTTTAGACA
TGACACAAATGTCAAAAAGCATAAAAGGAAAGATTTTGAATAAATAATAAAC
Sequence 269
GCGTCCGACAGATACACCATCATTATAGGTGGCCAAATCATTCAAATCGCTGTTTGCTTC
TTCTCGGGCTCTTATTCAAGCTCACGATGCTATTCTCATAGTGATTGCGAATCTCACTGC
ATAAAGGTGATTTTGAAAACATCACTTTTCCTCCACACTAATGTGTGAGCTTAGCCAGAG
TAGGAGATATATCTTACTTAAAAAAAAAAAAAAAAAAAAAAAAAA
Sequence 270
CCCTTTTTTNCGGCCNTCGGGCAGGTACGCGGGGAGGTCATGCCCGTGTGAGCCAGGAA
AGGGCTGTGTTTATGGGAAGCCAGTAACACTGTGGCCTACTATCTCTTCCGTGGTGCCAT
CTACATTTTTGGGACTCGGGAATTATGAGGTAGAGGTGGAGGCGGAGCCGGATGTCAGAG
GTCCTGAAATAAGTCACCATGGGGGAAAATGATCCGCCTGCTGTTGAAGCCCCCTTCTCA
TTCCGATCGCTTTTTGGCCTTGATGATTTGAAAATAAGTCCTGTTGCACCAGATGCAAGA
TGCTGTTGCTGCACAGATCCTGTCACTGCTGCCATTGAAGTTTTTTCCAATCATCGGCAT
TGGGATCATTGCATTGATATTAGCACTGGCCATTGG
Sequence 271
ACCGCGGNGGCTTCATGCAAGCTGTGGGCATGGNCAACGATCACGAAAATCATTNTTCCT
TTAAATAAAATACAATCCTATNNAAAGGAGTNCTTCCATGAGCAACAATCAAATACGTGC
TTATGCTGCGATGCAAGCAGGTGAACAACTGGTTCCTNATCAANTTGACGCAGGCGATTT
ACAAGCCCATCAAGACGAAGTCAAAGTTGAATATTGTGGATTATGTCATTCAGATATTTC
AAGTGATTAATAATGATTGGCCGATCATCTACTTATCCTGTAGNCGCAGGTCATGAAATC
ATTGGAACCATCACTGCTCTTTGGTTCATGAAGCGAAAGGACTCAAAG
Sequence 272
CCCTTAGCGTGGTCGCGGCCGAGGTACACCAAGACCAATTGCTAAAATCTTGGATTATGG
AAAATTTAAGTATGAAAGAAAGAAAAAACAAAANGTTGAAAAGAAAAACAATCTTTCAC
AAACAATAGAGAAATTCGTTTATCTTTTGGAATCAATTTAAATGATATAAAAATCAAAGC
AAAAAAAGCCAAAGAATTTTTATTAGATAACCGACAGAGTAAAAGTGGCTCTTCGTCTTA
GAGGGCGTGAAAATACAAGACCTGAACAAGGTAAATTAATTTTAAATTCTTTTTTTTGATG
AAGNAAAATCGATTGCAAAATTAAAGTAAAGAANNGCAATCAGTTTGGTAATTTTTTAAC
TCTTCATATTGAACGTGATAAGAAAAAATTACCCAAATTTACTTCTTCAAAACAAATAAA
GGAATTAATTGATTTTGAAAAAACTATTNAAGGAAGGAAGAAACTAATGCCTAANGCCAA
AAACAAAATCGCACTTTAAAAAAA
Sequence 273
CCCTTAGCGTGGTCNCGGCCTTTGTACGAAATTATGACTGTTTTAGCTNCAGGAACAGAT
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GTTTTAGCTAACTTAAAATCTGAGGAAAGTTTAATCGAAGAATTTGTCAGAAGAGTAAAT
ATTCTCAAAAAACAAGTTTTAAGATTTTTAGTTATTAATCTAGATTCTGAAAGAGGAATG
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ACANCTTCAACAGAAGAAGGTAAAAGTTTTCAAAAACCATTTGTCAAAAAACCTTTTGTT

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AAAAAATCAGAAGAAACAGATTCTTCAAAACAAAATGANCAAGACAAAGTGCTAAGAAAA
CCAAAAACTGTAAAAACCAGCAAAAGATCCTAAAGTAGCTCACACAGCAAAAAAAAAAAA
NAAAAAGTCCTGC
Sequence 274
CCCTTAGCGTGGTCGCGGCCGAGGTACNAAATTATGACTGTTTTAGCTCCAGGAACAGAT
TTAAAAGTAATTGAAGACGTTTTAAAATCTGTTTTTGATGCTAAGAACATCGAAAAAATT
GAAAAACTTGAAAGAACAGAGTTAGCATACNAAATTAAAAAACACAAACAAGGAATTTTT
GTTTTAGCTAACTTAAAATCTGAGGAAAGTTTAATCGAAGAATTTGTCAGAAGAGTAAAT
ATTCTCAAAAAACAAGTTTTAAGATTTTTAGTTATTAATCTAGATTCTGAAAGAGGAATG
CACAAAACTTTCAGACCTAGAAAAAATGATAAACACAAATTTTTCTCTTCTAAAAAACCA
ACAACTTCAACAGAAGAAGGTAAAAGTTTTTCAAAAACCATTTGTCAAAAAACCTTTTGTT
AAAAAATCAGAAGAAACAGATTCTTCAAAACAAAATGAACAAGGACAAAGTGCTAAGAAA
ACCCAAAAACTGTAAAACCAGCAAAAGATTCTA
Sequence 275
CCCTTAGCGTGGTCGCGGCCGAGGTANTTNCCTGANCAGTCGAAGTGGATGCCCAGACCA
ATGGCCAGTGCTAATATCAATGCAATGATCCCAATGACGATGATTGGAAAAAACTTCAAT
GGCAGCAGTGACAGGATCTGTGCAGCAACAGCATCTGCATCTGGTGCAACAGGACTTATT
TTCAAATCATCAAGGCCAAAAAGCGATCGGAATGAGAAGGGGGCTTCAACAGCAGGCGGA
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ACCTCATAATTCCCGAGTCCCAAAAATGTAGATGGCACCACGGAAGAGATAGTAGGCCAC
AAGTGTTACTGGCTTCCCATAAACACAAGCCCTTTCCT
Sequence 276
CCCTTTCGAGCGNCCGCCCGGGCAGGTACGCGGGGAAATGCAAAAAAATCAAATCAATTT
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TTCACCACTTTTAGCAAATGGAGAAGTGCTAAATTACACAATTAATCAAATGGCTGAGTT
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AGACGTTATTAGTTTTGAGTATGATTTAGAATATGGTAAATCAACTCTAGAAATCCAAAC
·TAATATGTTGAAAAAAGGCCAAAAAGTAGCAATTATTGATGATGTTTTAGCTACTGGCGG
AACAATGAAAGCGATTATTAACTTAATCGAATCTCAAGGTGCTGGTTGNTCATAAAGTAA
TCTTTTTACTTGAATTANGATTTTTAAACCGGAATTGAAAAACTTAAAA
Sequence 277
CCCTTTCGAGCGGCCGCCCGGGCAGGTNCTTCTAANGTTAAATCCTGAGGTAAGTCAACC
AAAACAGGATGTGAATATCCTAATAATAATTCTAAAGTCTTATCTTTTAATGTTGCTCTG
TAACCAACACCTTTGATTTCTAATTCTTTAGAAAATCCTTTANAAACTCCGGTTAACATA
CCTTGTAATGATGAATTTGTAGTTCCGNGTAATTGNTTAATATTTTTTTTCTTCTGATGTT
CTTTTAGTAAGTAGAGTGTTTTCAACTTTTTCAATTGAAATAAATGATGAAAATTCTCTT
GATAATGTTCCTAATTTACCTTTTATAGNTACTNAAGAATTGTTAATGTTTACTTCAACA
CCTTCTGNTATTTGTAAAACACGATTTCCGACACGAGACAATATTAATTATCAAATGTAA
GCAATGGATTTCACCACCTACATTTTTTCCCTTTCTTGCNTTGTATAATTAGGTTNAATAA
ATCCTTT
Sequence 278
CCCTTAGCGTGGTCGCGGCCGAGGTACAAGATAGTNNTCTCAGTAAAAGGTCTATTATCT
AACTTGCCAAACTTGTTTACTGAGAGCCCTAAGGAACTAAAACTGCCATAATGCCGTGCA
CAGCTTGAAAAGCAATTAGAGTAAGCAAGATTAGTTTTTCCTCCCTTCCAGTTCCTCAGC
AGGCCTGGCTGAAGGCCCAGGAGGGAAGGAAATATAAGANCCAACAATAAAAATAGCACT
AGCAATAANAAGAATGCCATCCCATGGAGCACACCATAAT .
Sequence 279
CCGAGGTACTAAACTCTNTTTAATGNNCTAACGTCATATTTTTTTAAGTTTTTCAATTCCG
TTTAAAAATCCTAATTCAAGTAAAAAGATTACTTTATGAACAACAGCACCTTGAGATTCG
ATTAAGTTAATAATCGCTTTCATTGTTCCGCCAGTAGCTAAAACATCATCAATAATTGCT

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ACTTTTTGGCCNTTTTTCAACATATTAAGTTNGGATTTCTAAGAGTTGATTTACCATATT
CTAAATCATACTCAAAACTAATAACGTCTCCTGGGTAATTTTTTAGGGTTTNCTTACCAT
AAATAAAAAGGGGTTTTTTTAAAAAAAAGCTGGCAGTAAGGGTGTCCCAAACAAAGAAAA
CCCTCTTGCGGTCTTGGGACCTATAATAACAATCTGCATCTTTAAGCTAAACTCAAGCCA
TTTGGGATTAATTGGTGTAAATTTAAGCACTTTCTCCATTTGGCTAAAAAGTGGGGNGAA
AATATCTTTAAAAATACAATCCCTTCAATTGGGGAAAAATCTTTTAACATCCTCTGGATG
GNATTTCTATTAAAAATTGGATTTGGA
Sequence 280
TATTTGGTGAAGATCAGCGTTATCAGCATTTTCTACGATTAAACGCTGGCCATGCTTTGA
CTGATGAAATCCGCCAAGCTATTCAGCAGTTGGCGGATTGGGTCAGAGAAAGTCTCAAGT
CGAAATTGAGTTAGTCGAAGTCTGCTTTCAATACGATGCGATAACGTGCTTGACCTGAAT
GAAGTCGCTCAATGGCATCGTTGAGCTGTGACATAGGATAGAGTTCAATTTGCGGGGCGA
TATTTTTACGTGCTGCAAATTTGAAGAAGTTGACGAAGTGCTAAAGGAGAACCCGTCGGT
GAACCTGTTACTGATTTGGCACCATCAATCAAAGCACCCGACTGAAACTGGGAATAGGTT
CTAAAAGTCAGACCTAGAAAAATG
Sequence 281
NGGTACCTCCACCGCGGTGGCGGCCGAGGTACANCCTCTCGGCCCGGCTAAACATCATCG
TCTTGGTAGGTCATTACCNTACCAACTAACTAATGNTCCGCACCCCCATTTTTAAGTGAA
GCTGNGAAGCTCCTTTCTATTACTCATCATGCGATAAATAACTATATCCGGTATTAAGCT
ATTGATTCCAATAGTTATCCCAGNCTTAAAGGTAGGTTAGGTACCTGCCCG
Sequence 282
CGANAAGCANGATTTTNAATTNTTGCAGCCCGGGGGGATCCGNGGAGNGGGGAGAGCCCAC
CGCGGGGGAGCGCCAACACGACNNAGAGCGAGNCGNAATACGCGCGCACACNGACCGCNG
ANNAACAAACGNNGAGACGGGGAAAACCCNGGCGNCCNCAACAAAAACGCCCGNGCAGCA
CAGNCCCCAAAAGCCAGCNAGGCGGAANANCGAACAGGCCCGCACCNAGCGNCCGNCCCA
ACAGNAGCACAAGCCCCGAANGGCGAAAAGGG
Sequence 283
AAACCCCCTNAAAAAGTNCCAAGGGGCCGCCAANNCGACTANAGCGAGNCGCATTACGCG
CGCNCACTGTTTGTCGTNNTTAACGCCGCGACCGGGNNGAACCNGGGCGNNACCCAACAG
GAAGCGCCGCGCANCACAACCCCCNACGCCAGCAGGCCGAnnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnAGNGGAGGAAACAGCGCAGCAGAGACCGNNACACANGCCAAC
GCCCNAGCNCCCGCNCNNNACGCNAGCAACCCCACCNAACANCGNCCACGNACGACNGCN
NGCCCCCGCNCAANCNCNAAAACGGGGGCCCCCNANNANGGGGACCCGANAAANCGCNAN
NACGGCACCCNCCGACCCCAAAAAACNNGAAAAAGNGAGAAGGGAGCACGNAAGNGGGGC
CAANCGCCCCNGAAAAGAACNGGCGNCCCGCCCNNANGAACGAANGGGANGACCCACGNC
CCNAAAAAAANAGGGGGACACCCGAGNNACCCAAACGGGGNAACAACACGCAAACCCNAAG
GCCGGCCGAAACGNGAANGGAACCAACAAGGGGACACANGCCCGAAAACCGGNCCAAAGG
GGGAAAAAAAAAGAAGCCGNAANNCAAACAAAAAANCNNAACGGCGAAAGNNNAAACAA
AANAAGAAACCNCNAACAACNCAAAGGNGNCACNNNNNCNGGGGAAAAAGGGGCCCC
Sequence 284
CGGGCAGGTACCTAACCTACCTTTAAGACTGGGATAACTATNGGAAACAATAGCTAATAC
CGGATATAGNTATTTATCGCATGATGAGNAATAGAAAGGAGCTTCACAGCTTCACTTAAA
AATGGGGGTGCGGAACATTAAGTTAGTTGGTAGGGTAATGGCCTACCAAGACGATGATGT
TNAGCCCGGGCCCGAGAGGCTGTACCTCGGCCCGCCACCGCGGTGnnnnnnnnnnnnnnnn
nnnnnnnnnnAGNCGTATTACGCCGCGCTCACTGGCCGGCGnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnACTTAATCCGCCTTGCAGCACAATCCCCCTTTTCGCCAG
CTGGGCGTAATAGCGAAAGAGGCCCCGCACCCGAAC
Sequence 285
CGTCCGTNAGGCCTGTNCTTACGGCTGGGTTTAGAAACCAGCCCATTCAGAAAGACTGAA
TCAGAACATGGATNAAGTGAACTNATTCTAAGATGACTCGNNTATCCATGTNGATTAATC

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TNCTGGNTCATAATAGGCCTCTTCCCTTTGATTGAAGGGTCACGTNTAAGTATANAAAAC
ATAAAACTGTAAGGTAGAGGAAGCGAAGGATAGCTTNGTATTAATGTTGCGTTAAAGCTT
CAGAGACAAGAACAAGAACACTCCTCCCACGTGACAGCATTTGAATAGGAGGCGGNGGGT
GCNGCAGCCTGGGCAGCTTCAGTCCCGATTTACAATAAAGTACCTTGNGNGTNATTAGTT
CTTAAATGTTTATTTAGAAATGGCATTGATGTT
Sequence 286
GCGTCCGGTCACCGCACTGAACTTCGGGACCAAAAGCTTCCATGCCGCGGNCCCCAGACA
AAGGCAGCTTCCCGCTGGACCACTTCGGTGAATGTAAAAGCTTTAAAGAAAAATTCATGA
GGTGTCTCCGTGACAAGAACTATGAAAATGCTTTGTGCAGAAATGAATCTAAAGAAGTAT
TTAATGTGCAGGATGCAAAGGCAGCTGATGGCACCGGAGCCGCTAGAGAAGCTCGGCTTT
AGAGACCTAATGGAAGGGAAGCCAGAGGCAAAGGATGAATGTTGAGAAGGGAGCCACAGG
ACCTTGTCCCCAGCCTGGAGCAGAGCTGAGCCCTTCTGCCCACAGNGCAGGGGGACCTGA
CACTCAGCCCGTGCTGGCCCGTGCAGGGGCTCTCCCTGGG
Sequence 287
CGTCCGGTGCACTGCAACTTNTATATNTAACCCTAAACTCCAATAAAACAAATTCCAGGG
AAAACCAAGGGTGTAATGGGATGTGCGTGTTTATCAGGAGTGTGCTCTCACGTGGATGCT
GAATGATGGAGGACAGCGGACTGCATAAGCCAGAAACCTGTACGGGTGCTGGCTGTGGAA
AGACGTGTCTGTCTCTATCTATGTACAATAGTTNATTCTGTCAGGCTGAAAAAGTATGGT
CTTTAGGACCTTGCCCCTCTAACTATAGAAACTTAAACAGTGTACTGCTATTAGATATAT
CTGATATTAATAGAACATGCCAAGTGCAGGTCCCAAATGCGTATTTGTGAAGCACACATC
TGAGTAAATGGCTTAGATGGAAAGCAAGTCATCATGAGTAAAAATTAAGCCTCAAACCTG
CCGGTGCTCCTCACCTCTTTGTCACCAGGTAAAGGTCACACTGTGTGTTGCTTTTGNTGT
CTTCTCTTCCTAACCTAG
Sequence 288
CNCGCGTCCGGGGGCTTGTTTACTATGGCCGATGATCTGGAGCAGCAGCCTCAAGGCTGGC
TGAGTAGCTGGCTGCCCACGTGGCGCCCCACTTCCATGTCTCAGCTGAAGAATGNGGAAG
CTAGGATCCTCCAGTGTCTCCAGAATAAGTTCCTGGCCAGATATGTGTCCCTCCCAAACC
AGAATAAAGATCTGGACGGTGACTGTGAGCCCCGAGCAAAAGGACCGCACCCCCCTGGTG
ATGGTGCACGGTTTTGGGGGCGGCGTGGGCCTCTGGATCCTCAACATGGACTCACTGAGT
GCCCGCCGCACACTGCACACCTTCGATCTGCTTGGNTTTGGGCGAAGCTCAAGGCCAGCA
TTCCCGAGGGACCCGGAGGGGGCTGAGGATGAGTTTG
Sequence 289
NGGAAAGCCGGCATAAGTGACATNGTTTGGGCAGTTGCCNGCTGGACTGAAGGGCNAACC
CANACCACCTTAAGCCATAAAAGCCCGTGACACTGCTANCNAAGGTGCCTTGCCCACCGC
TTTGCCACCNGTCCCGGAAATGNAAAAAAAGTCGCGTGCCNTAAAAAAGCTGCCGGAAGG
NCCTGGGTGNACNTTTGGGCCACCCCCACCCCGCTGGCAAGGNCTTGAATTGNGTNACNC
CAAAAGACGCCCANGCCGGACCTTGGNAAANNATTGTTNTTTNGGGANAAAAAAAAAATG
GANCCCGNTGGGGGAGGCCCTTGGGGGCATTGNGNAAGCCCCCGGAGGGGTTCCCCGNTGT
TGGCNGGGGTCAAATTCAAAGGCCAGTGGTNGGCCACCCCGGGGAACCTGGNNGCTGTTG
CAAGNACCNNGGTGGGGAACCGTTTCAAGGAATACCCCAACCAACCCANGTAGCCACCTT
AAGGTAATTTGGCCCACCTTGCCCACCANAANGNGCCATTGGGGAAGAAACCACCAAAAA
CGTTCCCCCCGGGT
Sequence 290
CCCCGCGCTCAGTATGACTCTTTAGTCCCAGTTTTCATGGGTAGTCTCTAAATTCTTTAC
CTTTATGTGATTGTGAGTTGGGAGGTGGTGGGCATCATCTTAGTCCATTTACCTTTTTCA
GTTTTGTAATTATCGTCTTCATCTACTACCTTTATATAATATAAAGGGAAGGGGTCTTCC
TTTACAAATAGTTTTATCATCCTTCTCTTTTTGATGTCTATATCTTCTATTTTTTGAGGA
GAATATATGTTGTATAGACCTACACGTGGGTGGAAGAAGAGTCATGTATGTGTGATTGTG
TGAGATCCAGAATGTTGGAACTTTTAATTTCTTATTTTGTACTTATAATTACCTGCTGGA
ATACCTGGTTGCATTCTGTATATTGTACCCTCATTTAAAAGTTCATGGAGGCAAAATAAC
TCTGTTGCACATAAGGCCGGGGGCTTATGCATGTCCTATCGGATGTGGGCTCAGATCACGG

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AAGACCCGAA
Sequence 291
TCTTGCAGACTCAAGCTCCGCGCGCAGCCGCTCCTGGTGCGGGCCCACAGCAGCCTGGGC
CCCGGNTCGGCCCCGGAGCCCCCTGGCCTGCGACGACTGTTCCCTTCGATCGGCCAAATC
CTCCTTCAGCCTCCTGGCGCCCATCCGCAGCAAGGACGTTCGCAGCAGGAGTTACCTGGA
GGGCAGCCTNCTGGCCAGNGGGGCCCTGCTGGGGGCAGACGAGCTGGCCCGCTACTTCCC
AGACCGGTACGTGGCGCTCTTCGNGGCCACCTGGAACATGCAGGGCCAGAA
Sequence 292
NGGCCCGCCCGGGCAGGTACTAAACTTTAATTAATGAGCTAACGTCATATTTTTTAAGTT
TTTCAATTCCGTTTAAAAATCCTAATTCAAGTAAAAAGATTACTTTATGAACAACAGCAC
CTTGAGATTCGATTAAGTTAATAATCGCTTTCATTGTTCCGCCCAGNTAGCTAAAACATC
ATCAATAATTGCTACTTTTTGGCCTTTTTTCAACATATTAAGTTTGGATTTCTAGAGTTG
ATTTACCATATTCTAAATCATACTCAAAACTAATAACGTCTCCTGGTAATTTTTTAGGTT
TTCTTACCATAATAAAAGGTTTTTTTAAAAAAGCCTGCAGTAAGGTGGTCCCAAACAAGA
AAACCCTCTTTGCGTCTGGGACCTATAATAACCATCTGCATCTTTAGCTAACTCAAGCCC
ATTTGATTAATTGGNGTAATTTAGCACTTCTCCATTTGCTAAAAGGTGGTGAAATAATCT
TTAAAATACAATCCCTTCAAATTGGGGAAATCTTTTAAACATCCCCCGGCGGTACCTCGG
GCCCGCTTCTAGAACTAGTGGGATCCCCCGGGCCTG
Sequence 293
GCTCCCCGCGGTGGCGGCCGCCCGGGCTGGTACGCGGGGAAATGCAAAAAATCAAATCAA
TTTAATACGAATACATCATGAGATGTTAAAGATTTCCCAATTGAAGGGATTGNNTTTAAA
GATATTTCACCACTTTTAGCANATGGAGAAGTGCTAAATTACACAATTAATCAAGTGGCT
GAGTTAGCTAAAGATGCAGATGTTATTATAGGGCCAGACGCCAAGAGGTTTCTTGTTTGG
GACACCTACTGCAGCTTTTTTAAAAAAAACCTTTTATTATGGTAAGAAAACCTAAAAAATT
ACCAGGAGACGTTATTAGTTTTGAGTATGATTTAGAATATGGTAAATCAACTCTAGAAAT
CCAAACTAATATGTTGAAAAAAGGCCAAAAAGTAGCAATTATTGATGATGTTTTAGCTAC
TGGCGGACAATGAAAG
Sequence 294
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAATTTCTAATTG
ATCCTGTTCACATTCAGTGAAATGGCATTGCATATTTATATGTTGCTTACAGCTTATTGA
TTTAGGTAACTATTGTGTCTTCCTTCACTATCTGACCTGAAAAGCACTCTCTTCTCTATG
CACTCTTATATTCTGCCTTTCTGCCTGGAGTTTGAAATACATGTCTCTTTAGTTTCTTTT
GCACATGCTACATTGTGCTTTAGACCGGGAGATAATACAGGNGCCTTACCTTACAAATTN
ATNTTTNTGGCAACNCNAATTNTNTNGAAATTTTNNTTTAATTTNAAAACCCCAAACCAA
TTTTCCNNCNCAAAAATTTTTTTTTTTGGGAAAAATTAANTTCTTTAAANNNAACCCCCCN
AAAAATTATNGGNGNNAAAAGGGNGCCCCNTTTTGGGCCCTTTTTTTTTTTTCNCGGGNG
GGGNAAAAAATTTNAAAAAAANTTTTTTTTGGGNNCCCCGGGAGAAAAAANNTCCCCTNTT
TTTTTTTTCNGGGGTTTTAAAAANGGGGGGGNNAAAAAATNTTTNNTGGCCCCCCCCCNTTTT

Sequence 295
TATAGGGCGAATTGGAGCTCCCCGCCCGNGGTCCCAAATGGAAGTGTGAAAACCANGGCC
CATCCCCCNNTTTTTNTAGAGGGGTGGTAAAAAATAAACCCANANATCAAGGGGGAGAAAGG
AAAAGGATGAAAGGACAAACTGCCAAAAAAATTTNCCCAAAGTGGCGACTTTTTTAANTN
TGGGAGCCAGAATTCTGAGGGCTTTGCATTGTCTTTGCAATTCNCTCAAGGAGCCTGAAA
TTGAAAAAAAATGCCAACAAGGCCAAATNAACTACTTTTTAGGAGGGGGTTTTGGAGGTC
TTGGGAAGCCTCATTCCCNTTCAACCNNTCNAATTCTGGGAATGGGGGAAATGGAAAGAA
TAGAAGATGTTGGGTGCCCACTAGGCTACTGNTTGAAAAGGGGAAGCTTGAAAANTTNCT
NCACCCAAGGTTGGGTATTCAAAAATATTGTAATGGACTGGGTATTGGCAAAAAGG
Sequence 296
GGCGAATTGGAGCTCCCCGCGGTGGCGGCCCGAGGTACAGGTGGGTCCCTTTTCAGAGGT
TGGGCCTTCTAGACCTCACCTGTTCTCACTNCCCTGGTTTAAATTCAACCCCCAAGCCATG

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GCCAATGGCCAAATAATAGAAATTGGTTCCCTACCCAGCTGGACCAGGGGAGGGAGGTCT
TGTGCAGTTTCTTGACCACTTTGTTGGTTGGACCATGGCTTAAATACCAATGGGGTATT
CGGCTTGAGACCTAAAGTTTGTAAGAAAATTNAACCAAAATGGTGCCTGCTTGGGTTAAA
AATGGGCTACCACCTCAATCTGGACTTCAATTCTTTTAATTCTAATTTTAAGTTTGGGTT
TTGGTATTCTTTGGCCTAAAGGTGGCGGTAGTCCCAACCTCTTTGGGTANTTACCCCTTC
CTAAATAGGTCAATACCTAGGTAGGTCAATACCTCCCTGGGTGGTAAGGNGGTATTTCTT
CTTAAAAAAGCCTTTTAAAA
Sequence 297
CCGCGGTGGCGGCCGCCCGGGCAGGTACGGCCACACTGGGACTGAGATACGGCCCAGACT
CCTACGGGAGGCAGCAGTAAGGNNTTTTCCACAATGAGCGAAAGCTTGATGGAGCGACAC
AGCGTGCAGGATGAAGTTCTTCGGAATGTAAACTGCTGTTATAAGGGAAAAAAAAAAAAA
AATAANNAAAAAAAANGGTACCT
Sequence 298
TAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGNCAGGTACGCGGGNGAAATGCA
AAAAAATCAAATCAATTTAATAGAATACATCAGAGATGTTAAAGATTTCCCAATTGAAGG
GGTTGTATTTAAAGATATTTCACCACTTTTAGCAAATGGAGAAGTGCTAAATTACACAAT
TAATCAAATGGCTGAGTTAGCTAAAGATGCANATGTTATTATAGGTCCAGACGCAAGAGG
TTTCTTGTTTGGGACACCTACTGCAGCTNTTTTAAAAAAACCTTTTATTATGGTAAGAAA
ACCTAAAAAATTACNAGGAGACGTTATTAGTTTNGAGTATGATTTAGAATATGGTAAATC
AACTCTAGAAATCCAAACTAATATTTTTGAAAAAAG
Sequence 299
CCGGGCAGGTACGGCCACACTGGGACTGAGATACGGCCCAGACTCCTACGGGAGGCAGCA
GTAAGGAATTTTCCACAATGAGCGAAAGCTTGATGGAGCGACACAGCGTGCAGGATGAAG
TTCTTCGGAATGTAAACTGCTGTTATAAGGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
GTACCT
Sequence 300
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTCTAGGACAATCAGGAAG
TAATCTTAAAAAAATAATTGAAGATGTTAAAAAATACGTTAAAAATAAAAAACTTGTTTT
AAACATAGATGCAGTAGAAATTGAAAAACCAGATTTAGATGCAAAATTATTAGCTGAATC
AATTGCAATTAAATTAGAAAACCGTGGATCATACCGTATGGCACAAAAATTTGCAATTCG
TTTAGCACAAAAAGCCGGAGCTAAAGGTATTAAAACTAAAGTTAGTGGTCGTTTAAATGG
TGTTGATATGGCTAGATCAGAAGGATATTCTGAAGGTGAAATGAAATTACACACACTTAG
ACAAGATGTTAGTTATGCAACAGCAACAGCAAGAACAACTTATGGAGCACTTGGAGTTAA
AGTTTGAGTTTCATTAGGCGAAGTATTT
Sequence 301
CCGGCCAGGTACGCGGGGAAATGCAAAAAAATCAAATCANGNTAATAGAATACATCAGAG
ATGTTAAAGATTTCCCAATTGAAGGGATTGNATTTAAAGATATTTCACCACTTTTAGCAA
ATGGAGAAGTGCTAAATNACACAATTAATCAAATGGCTGAGTTAGCTAAAGATGCAGATG
TTATTATAGGTCCAGACGCAAGAGGTTTCTTGTTTGGGACACCTACTGCAGCTTTTTTAA
AAAAACCTTTTATTATGGTAAGAAAACCTAAAAAATTACCAGGANACGTTATTAGTTTNG
AGTATGATTTACAATATGGTAAATCAACTCTAGAAATCCAAACTAATATGTTGAAAAAAG
GCCAAAAGTAGCAATTATTGATGATGTTTTAGCTACTGGCGGAACAATGAAAGCGATTA
TTAACTTAATCGAATCTCAAGGTGCTGNTGTTCATAAAGNAATCTTTTTACTTGAATTAG
GATTTTTTAAACGGNATTNAAAAACTTAAAAAAAATATGACCGTTAGCTCATTAATTAAAAG
TTTAGTACCTCGGCCCGCTCTAG
Sequence 302
AGGTACTTTGATATCTNCGCCCTCTCGTGTGTGTTCCTTGTGGGNGNTAACCAGAGGCAAGAT
GCCCGAGGAACTTCATGTGTATGTCTACCAGGATTTCAGATGATCTCTAATAATGGAGGA
CCTGCTATTATTTGTAAAAAGTGCCCAGAAAACATGAAAGGTGTTACAGAAGATGGCTGG
AACTGCATTTCTTGCCCTAGTGACTTAACTGCCGAAGGAAAATGTCACTGTCCCATTGGC
CATATTTTAGTGGAAAGAGACATTNATGGAACATTGNTGNCTCAAGCAACTNGNGAGCTC

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TGNGATGGAAATGAAAACTCTTTTATGGTAGTAAATGCTTTAGGAGACAGGNGCGTNCGA
TGTGAGCCAACATTTGNTAATACCAGCAGGTCCTGTGCATGTTNCGAACCTAACATTTTA
ACAGGGGGATTATGTTTCAGNAGCACAGGGAATTTTTCCTTGTACGTANAATTTCACCTG
CACGTTATGGAGAAGTTTGGCAT

Sequence 303

CCGGGCAGGTACGCGGGGAAATGCAAAAAAATCAAATCAATTTAATAGAATACATCAGAG
ATGTTAAAGATTTCCCAATTGAAGGGATTGTATTTAAAGATATTTCACCACTTTTAGCAA
ATGGAGAAGTGCTAAATTACACAATTAATCAAATGGCTGAGTTAGCTAAAGATGCAGATG
TTATTATAGGTCCAGACGCAAGAGGTTTCTTGTTTGGGACACCTACTGCAGCTTTTTTAA
AAAAACCTTTTATTATGGTAAGAAAACCTAAAAAATTACCAGGAGACGTTATTAGTTTTG
AGTATGATTTAGAATATGGTAAATCAACTCTAGAAATCCAAACTAATATGTTGAAAAAAG
GCCAAAAAGTAGCAATTATTGATGATGTTTTAGCTACTGGCGGAACAATGAAAGCGATTA
TTAACTTAATCGAATCTCAAGGTGCTGTTGTTCATAAAGTAATCTTTTTACTTGAATTAG
GATTTTTAAACGGAATTGAAAAACTTAAAAAAATATGACGTTAGCTCATTAATTAAAGTTT
AGTACCTCGGCCGCTCTA

Sequence 304

GCGGTGGCGGCCGAGGTACCTTNTCCGAATGCACCTTNAAAGCGGGTATTAGCCTATACA
GGCTGTTTTAGTCGAATGCAGACCATCAAGGAAATTCNNGAATATCTATCTCAAAGACTG
CGCATTAAAGAGGAAGATATGCGCCTGNGGCTANTCCANAAGTGGAGAANTACCTTACTC
TTTCTGGGNTGATGAGGAATCATAAATCTGGAATATTTNGAAAATCCAGGATGAACAACA
C

Sequence 305

GCNGNCGCGGGGAAATGCAAAAAAATCAAATCAATTTAATAGAATACATCAGAGATGTTA
AAGATTTCCCAATTGNNGGGATTGTATTTAAAGATATTTCACCACTTTTAGCAAATGGAG
AAGTGCTAAATTACACAATTAATCAAATGGCTGAGTTNAGCTAAAGATGCAGATGTTATT
ATAGGTCCAGACGCAANGAGGTTTCTTGTTTGGGACACCTACTGCAGCTTTTTTAAAAAA
ACCTTTTATTATGGTAAGAAAACCTAAAAAATTACCAGGAGACGTTATTAGTTTTGAGTA
TGATTTAGAATATGGTAAATCAACTCTAGAAATCCAAACTAATATGTTGAAAAAAGGCCA
AAAAGTAGCAATTATTGATGATGTTTTAAGCTACTGGCGGAACAATGAAAGCCGATTATT
AACTTAATCGAATCTCAAGGNGCTGGTGNTCATAAAGTAATCTTTTTTACTTGGAATTAG
GGATTTTTNAACCGGAAATTGGAAAAA

Sequence 306

ATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACGCGGGGGCAATTA
TGAAATTATTGCAGAAAGAAGATTCACTCTCACCTGATGAATAAGTGTTCATAGGTNAAG
GCTACAAAATACTAATTTGTTATTATTTTTAATAATAATTTTTGTTTTGCTGAGAAAGTG
GATTTACCACTTTTTTTATTTTTTTAATCCAAGGAGGAAAAATTATTTCCAAACCAAATCCT
AAAAATTTTTCACGTTCTAAACCAGTTCAAGAACATTGAGTAAACAGAAATATTCCATTT
GTCAAAGTTTTTCTTATCGGCTCAGATAATGAAAAAATTGGGATAATTGAAACAAGAGAA
GCTATTGAAATGGCAAAGAACAAAA

Sequence 307

CGAATNGGAGCTCCCCGCGGTGGCGGCCGAGGTACGCGGGGGCAGCAAGCGGACGTGAGC
GATAATGGCGGATATGGAGGATCTCTTCGGGAGCGACGCCGACNGCGAAGCTGAGCGTAA
AGATTCTGATTCTGGATCTGACTCAGATTCTGATCAAGAGAATGCTGCCTCTGGCAGTAA
TGCCTCTGGAAGTGAAAGTGATCAGGATGAAAGAGGTGATTCAGGACAACCAAGTAATAA
GGAACTGTTTGGAGATGACAGTGAGGACGAGGGAGCTTCACATCATAGTGGTAGTGATAA
TCACTCTGAAAGATCAGACAATAGATCAGAAGCTTCTGAGCGTTCTGACCATGAGGACAA
TGACCCCTCAGATGTAGATCAGCACAGTGGATCAGAAGCCCCTA

Sequence 308

GGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTAATGTTATTAATGTGACTGACA
AGTAATTAGAAAACTGGAAATTAAATTTTACAAACATTTTTAAAATCGCTNCAATTAAAA
AAATTCAAGATGGTTACATTATGAATATGAATGAAATGTCATTAGCGACTTCGTTAAATG

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TATATGTAATTCTATATTTTCCCCAAAACCCACATTTTATGAAGAATATTTATTTATTTA
TTTATTTTTGTTTTTTGAGATGGAGTCTCGCTCTGTTGCCAGACTGGAGTGCAATGGTGC
GATCTCCGCTCACTGCAACCTCCACCTCCTGGGTTCAAACGATTCTCCTGCCTCAGCCTC
CCGAGNAGCTGGGACTACAGGCACCGNCACCACGCCCGGCTAATT
Sequence 309

CCGCGGTGGCGGCCGCCCGGGCAGGTACTGACCCTCCTTGATGGTTTACTTTGCAAGCTA
TGGTGACCTCCGCAAGTTGTGTCTGGGCCCATCCAGGGCTCTGACTAATTGTATTCAAAT
CAAGGCAGGAGCGGGCCAGCTGGCGTTGACTTAACCAAGCCATTTTATAAGCCTCCCGAT
CATTTTTAAGCCACTCTAAGTCGTGTAGTAGGATCTGGTCAGAGTTATGTATACTCTGAT
GGGCATGTGCTGTGTCGTCTAAAATGTCCAGAAGTTCTGAAACACTTTTAGATCTTCCAG
AATTTCTTGAGGAAGTCTGCCTAAGTAACTGATGCACATCAAGTTCATCACCGGAGGAAT
CAAAAGAATTTCCATTTTCTATTTCTCTACAGAAAAGAAAAGGATCTTCCTTTAAGATGG
AAATATTATTTCTCTTC
Sequence 310

CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCACTTGAATTATCTA
TTGAAAGAACTACTACATCGAGTTTTTGTTCTTTTGCCATTTCAATAGCTTCTNTTGGNN
NAATTATCCCAATTTTTTCATTATCTGAGCCGATAAGAAAAACTTTGACAAATGGAATAT
TTCTGTTTACTCAATGTTCTTGAACTGGTTTAGAACGTGAAAAATTTTTAGGATTTGGTT
TGGAAATAATTTTTCCTCCTTGGATTAAAAAATAAAAAAGTGGTAAATCCACTTTCTCAG
CAAAACAAAAATTATTATTAAAAATAATAACAAATTAGTATTTTGTAGCCTTTACCTATG
AACACTTATTCATCAGGTGAGAGTGAATCTTCTTTCTGCAATAATTTCTAATTGCCCCGN
GTACCTGCCCGGGCGGC
Sequence 311

TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGNCAAGGTACCTGACTGTGGC
TCANATCTGCGTCGCAGCAGCGAGAGAAGAAATCACTCCATATCCGATGAGAGGAAGGGT
GGCACAGANATGGTGTCTACAATTAGAGACATTTCTGACTCCACCTTAGCCTAAGCAAAC
TTTATATACTGAGTAACATTTGAAGGTTGTCTTTTAATGGTGGGGGGTGNTTTTTCCTTT
TTAAACTACAGT
Sequence 312

CCAAAANGGGNCCTGGGGCGTGGTCACGGCCNAGGTACAAAATTATGACTGTTTTAGCTC
CAGGAACAGATTTAAAAGTAATTGAAGACGTTTTAAAATCTGTTTTTGATGCTAAGAACA
TCGAAAAAAATTGAAAAACTTGAAAGAACAGAGTTAGCATACGAAATTAANNAGCACAAA
CAAGGAATTTTTGTTTTAGCTAACTTAAAATCTGAGGAAAGTTTAATCGAAGAATTTGTC
AGAAGAGTAAATATTCTCAAAAAACAAGTTTTAAGATTTTTAGTTATTAATCTAGATTCT
GAAAGAGGAATGCACAAAACTTTCAGACCTAGAAAAAATGATAAACACAAATTTTTCTCT
TCTAAAAAACCA
Sequence 313

AATNGGGCCTNGCGTGGTCACGCCCAGGTACNAAATTATGACTGTTTTAGCTCCAGGAAC
AGATTAAAAGTATTGAGCNTTTTAATCTNTTTTGATCTAAGACATCGAAAATTGAAAACT
TGAAAGACAGAGTTAGCATACNAATTTAAANGCACAACAGGATTTTTTGTTTTACTAACT
TAAATCTGGGGAAGTTTAATCNAAGATTTGTCAGAAGAGTAAATATTCTCAAAAAACAAG
TTTTAAGATTTTTAGTTATTAATCTAGATTCTGAAAGAGGATTGCNCAAAACTTTCAGAC
CTAGAAAAATTGATAAACACAAATTTTTCTNTTTTTAAAAAA
Sequence 314

NGGGCCTNGGNGTGGNNACGANCCAGGTACTTTTACCAAAGAATCTACTAGAACTCTCTG
CTATTCAAAACAAAGAGCTCATACTTGTTGGAGTAGGGAAAAAATTAGAAATTTGACCAA
AAGATAGATTCAATCAACTACAAAGTCAATTCCAAGATGCTGNTAACATCGAAACTCTTG
AAAAAGAACTATTANAATCTGGAGTTGAACTTTAATGGATCATATACCTGNTTTGCTTGA
TCAAGCGGATTGNTCAGCTTAATATTAAAGAAGATGGNATCTATTTAGATCTTACTTTAG
GACGNGGNGGNCATTCGAGNCAAATTTTAAAAAAAACTTACTA
Sequence 315

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CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTGTCCATAATTTGTGAATATATTAACTAAT
TTTTCTTTTGAGTATTCATTTACTAACTCATAAGCTGAAAAGCTTTGAGCTTGATTCATT
CTCATATCCAAACGAGCTTGTTTGTTGTATGAAAATCCTCTATTGGCTTGATCTAACTGA
GGTGAAGATACTCCTAAATCAAGTAATACACCATCTACTTTGTTGATTTGAAGTTTTTTT
AGTTCTTGATCAAAATCTTTAAAATCAGATCAAATAAATTCAATATTTGAAGAAATTTTT
AAGAGTTTTTCTTTTGTTTGTTCAATTGCTTGTTTGTCTTATCAAAGACTA
Sequence 316
CCCTTAGCGTGGTCGCGGCCGAGGTACAGGAACTGCCAAAGGCAACAGAAATTCTTTCTC
CCTATGTCCCAGCCTACCCCCACTTTACCGAGGCCAACAGCCGCCTCAGAAACCAGATTC
AGGAGCTAACATGCCCCAGGTCTCACGAGGATCAGAGACTCCAGAGGCCAGGGAAGGAGA
TCAAGGTAGTCAAGCGGGGGTCGTCTCAGATCTGGTTGTGCTCGAGCTATGCAAATGCCT
CTCATGGAGATGTGAGGACCTATCTATTATGATGACCAGGGCCACATCCGGAGGGGGCAA
CAGACTTTCATCTATCAGCCCTTTTCAACCACTGATCTACTAAACTGGAAACACTCTGAA

Sequence 317
NGGGCCTTGNGAGCGGCCGCCCGGGCAGGTACGCGGGGGTTTAAAAAAATATTTAAAAAA
ATGGAGGAATTATGAACTTAAAAAGCAAATTAAGAAGCTTTTTAGGTGCTACTGCACTTG
TGTTGCCAGTAGCATTTTTTGCTTCTTGCCAAACAAGATTTGNNNAAGTAAATGACCATA
AATTAGTGATTGCTCACACTTTTAATAGTAGAGAAGGAAGGTTTTTAGCATTAGATCAAA
TTGTTAAGCTTTGAAATGAAAGTGAAAAAGTTAAAAACAAAGAAGAAGGATTTTATCCAA
TAACACTAAATCGACAATTTGCGCAAACTTATGCAGAA
Sequence 318
CAGGTACTTTAGCTCCAAAATCAGTTTGATGAGATACAGTTGCCCCTATATGAGAATGCA
CAGGATTCCTCATTGGTGAGTTCAACCATACATTTTGGGTAACTCCTGAAGACATCTGCA
AATTGTGAGTTAGTTGGTGGGGTCCATTAACATTTGCATATGTTATTCTTTCTACTGAAG
TGTGTGAGGCCACAACTGTCCCATTATGCATATCANAAACAGAAATTTGTTGAGGATAAT
TTTGGATATTCAGCAGNGGCTGNGAAACTGGATTTGAATTACCGGGATACATGCATGCTT
CTTGGTT
Sequence 319
CCCTTAGCGTGGTCGCGGCCGAGGTACGCGGGGCAATACGTAGAGATAATAACAGTTTTT
TAAAAAACTTAATATTTGTTATTGAATGTATATTTTTGAGTATTGCATCTTTTCTATACT
AATAAGGAGGTGTAATTTGAACGCTTTTAGAAAGAAAAAAGAAGAATTAGTGCAAGAAAT
TAAAGATTTGATTAATTCTTCTTCTTCATTAGTTATAGCTGAATATCGTGGATTAACAGT
TGCTGAAATTGAAACTCTTAGAAATGAAGCTTAAAGAAGCAGGTGTTTTTGTAAAAGTTT
ATAAAAATAGACTATTTAAAATAGCATCTAAAGAAGCAGGTTTCGGAGATTTAGAACAAT
CACTAGTTGGTCCAAATTTTTTTGCTTTTGGTTCTACAGATGCANTAGCTCCAGCTAAAA
TTATTTCAAAATTCGCTAAAAACAAATCCAGTAAGTTGTATTAAAAGGCGGTATTTTTTG
A
Sequence 320
CCCTTAGCGTGGTCGCGGCCGAGGTACCACGGAATTTTAAAAATAGACTNTAAAAAACCN
TCAATTGCANAACTAATTTTGNTTGATTTACTTCAAATTGAAGGAACTCTTTTAGGTTTT
GTTGNAATAGTAAANGAAATTCGATNAGTAATTCAATCAAAGAATAATGAATNGACAAAT
TCTGACATAAAAACAGCCAAAGAATATCATTTAGAACAACTAANAGCGCTTAAAAAAACT
TCAAATTAACAAATATAATTTATAATTTATGGCACTATGAAAAAAAAGNGACTTTATTTA
ATATCAACTTTANCATTTTCAACAATTTTATTAGCTATTNCTNGTGGTAAAAATCAAACT
ACTCCTGTAGGCACACAACCANTTGATANTCCAAGCCTGGAGGATTCATCAAGNGAATCA
ANAGTTCTGGATTTAAATTAATAGAAAAAAAG
Sequence 321
CCCTTAGCGTGGTCGCGGCCGAGGTACAATTTCTAATTGATCCTGTTCACATTCAGTGAA
ATGGCATTGCATATTTATATGTTGCTTACAGCTTATTGATTTAGGTAACTATTGTGTCTT
CCTTCACTATCTGACCTGAAAAGCACTCTCTTCTCTATGCACTCTTATATTCTGCCTTTC

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TGCCTGGAGTTTGAAATACATGTCTCTTTAGTTTCTTTTGCACATGCTACATTGTGCTTT
AGACCGGAGATAATACAGTGACTTTACCTCACAAATCATATTCTGTCAACACAAATCTAT
GAATTTAGTTTATTTAAAATCAGAACAATTTCCTACAAAATTTTTCTGGAAAATAGACTC
CTAACAGACCTACCAGAATCATGCTTAAAGGGCTCCCTTGACACTTATTCTATACTGAAG
GATAAATTTTAAAAAAT
Sequence 322
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTAGTTAA
ATATAAATTTATTTATTAACTTTTTCAATACCTTTTGAAGGTCAAAGTTTGTAAGATGAA
TTAGGTTCTTTTGAAAGTAAATTCCCACAACTGAAAGTGCAGCTAGAATAATAAATACTG
CATATGCAGCTTCTGTTGATGCTGATTTAATTCCTGCAACTAGAACAGTTGCTATAGAAT
AAAATGCATAACCTAATCCTCANATAAGTCCAAATTGATATCCAACTTTTTTAGGATTTG
ATCCTTTGTATTCGGGAGGAAGATTTAAGATAACACCTTGAATTCCTCAAAGCATTACTC
CCATTAAAAATCCTAAAATATAGAATAATCAAGTTCCATTACCTA
Sequence 323
GCGGTGGCGGCCGCCCGGGCAGGTACAAGGTAAAGCAAGAGCTGGCTCTCTACGTTCACC
AATTTTTGTAGGTGGTGGTCGTGCATTTGGGCCTACAAATAATAAAAAATTACAAAATTAA
ATTAAACAAAAAAGTTCGCAAATTAGCTTTTGCCTCAGCTTTTAAGTCAACTTGCTCAAA
ATAATCAAGTACCT
Sequence 324
NNCTTAGCGTGGTCGCGGCCGAGGTACGCGGGGAAATGCAAAAAAATCAAATCAATTTAA
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CACCACTTTTAGCAAATGGAGAAGTGCTAAATTACACAATTANNCAAATGGCTGAGTTAG
CTAAAGATGCAGATGTTATTATAGGTCCAGACGCAAGAGGTTTCTTGTTTGGGACACCTA
CTGNAGCTTTTTTAAAAAAACCTTTTATTATGGTAAGAAAACCTAAAAAATTACCAGGAG
ACGTTATTAGTTTTGAGTATGATTTAG
Sequence 325
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTGTCCATAATTTGTGAATATATTAACTAAT
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CTCATATCCAAACGAGCTTGTTTGTTGTATGAAAATCCTCTATTGGCTTGATCTAACTGA
GGTGAAGATACTCCTAAATCAAGTAATACACCATCTACTTTGTTGATTTGAAGTTTTTTT
AGTTCTTGATCAAAATCTTTAAAATCAGATCAAATAAATTCAATATTTGAAGAAATTTTT
AAGAGTTTTTCTTTTGTTTGTTCAATTGCTTGTTTGTCTTTATCAAAGACTA
Sequence 326
CCCTTAGCGTGGTCGCGGCCGAGGTACAGGAACTGCCAAAGGCAACAGAAATTCTTTCTC
CCTATGTCCCAGCCTACCCCCACTTTACCGAGGCCAACAGCCGCCTCAGAAACCAGATTC
AGGAGCTAACATGCCCCAGGTCTCACGAGGATCAGAGACTCCAGAGGCCAGGGAAGGAGA
TCAAGGTAGTCAAGCGGGGGTCGTCTCAGATCTGGTTGTGCTCGAGCTATGCAAATGCCT
CTCATGGAGATGTGAGGACCTATCTATTATGATGACCAGGGCCACATCCGGAGGGGGCAA
CAGACTTTCATCTATCAGCCCTTTTCAACCACTGATCTACTAAACTGGAAACACTCTGAA

Sequence 327
NGGGCCTTGNGAGCGGCCGCCCGGGCAGGTACGCGGGGGGTTTAAAAAAAATATTTAAAAAA
ATGGAGGAATTATGAACTTAAAAAGCAAATTAAGAAGCTTTTTAGGTGCTACTGCACTTG
TGTTGCCAGTAGCATTTTTTGCTTCTTGCCAAACAAGATTTGNNNAAGTAAATGACCATA
AATTAGTGATTGCTCACACTTTTAATAGTAGAGAAGGAAGGTTTTTAGCATTAGATCAAA
TTGTTAAGCTTTGAAATGAAAGTGAAAAAGTTAAAAACAAAGAAGAAGGATTTTATCCAA
TAACACTAAATCGACAATTTGCGCAAACTTATGCAGAA
Sequence 328
CAGGTACTTTAGCTCCAAAATCAGTTTGATGAGATACAGTTGCCCCTATATGAGAATGCA
CAGGATTCCTCATTGGTGAGTTCAACCATACATTTTGGGTAACTCCTGAAGACATCTGCA
AATTGTGAGTTAGTTGGTGGGGTCCATTAACATTTGCATATGTTATTCTTTCTACTGAAG

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TGTGTGAGGCCACAACTGTCCCATTATGCATATCANAAACAGAAATTTGTTGAGGATAAT
TTTGGATATTCAGCAGNGGCTGNGAAACTGGATTTGAATTACCGGGATACATGCATGCTT
CTTGGTT
Sequence 329
ATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTAAACTTTAATTAATGAGC
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TTACTTTATGAACAACAGCACCTTGAGATTCGATTAAGTTAATAATCGCTTTCATTGTTC
CGCCAGTAGCTAAAACATCATCAATAATTGCTACTTTTTGGCCTTTTTTCAACATATTAG
TTTGGATTTCTAGAGTTGATTTACCATATTCTAAATCATACTCAAAACTAATAACGTCTC
CTGGTAATTTTTTAGGTTTTCTTACCATAATAAAAAGGGTTTTTTTAAAAAAGCTTGCAG
TTAGGGTGGTCCCAAACAA
Sequence 330
CCGCGGTGGCGGCCGCCCGGGCAGGTACACCTCTGATTCTCACTAGTTGAATGCAAGAAC
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ATCTGAAACTCAGGAATCAAAAAATACCGACAGGCACTGTTACTTTCAAAATTCTTTCTA
TAAGTTGAGAATGGGACAGATTTGCAGAGCAAGGGAAACTTGAACAGTTACTTCTAGTGG
TAGGAAATGAGGTGGCTAGGATATTACCCAGCTGGTGGGTGACTTGGGCAGTGTGTTCCT
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GTATTACAGTGCTCTTGTTTTTGTAAAATTTAATTCACTCTACTGNTATTTTGTCTCCTT
GGGTAAAGNGNTATTTAATTTTTCT
Sequence 331
ATTATTGCNGAAAGAAGATTCACTCTCACCTGNTGAATAACGTGTTCATAGGTAAAGGCT
ACAAAATACTAATTTGTTATTATTTTTAATAATAATTTTTGTTTTGCTGANAAAGTGGAT
TTACCACTTTTTTATTTTTTAATCCAAGGAGGAAAAATTATTTCCAACCAAATCCTAAAA
ATTTTTCACGTTCTAAACCAGTTCAAGAACATTGAGTAAACAGAAATATTCCATTTGTCA
AAGTTTTTCTTATCGGCTCAGATAATGAAAAAATNGGGGATA
Sequence 332
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TGCAGCTGCCTGAACCGAGCCCTGCCGAACAGCTGAGAATTGCACTGCAACCATGAGGTA
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GAAGCTATGTTCCCAAAGAGGGCCAGCTCCATTTAGTGTTTGTTTATAGCCTTACTATGC
CTCTACCTCTGGGGGTTGTAAATCTGTTNTACCCAATGGGNGGGTTTGTTNCCCTTCCTG
AANCAAATTTTTCTGCTTNNACACTTGGGCAAACCNTTTCCTAAATTTCATCCTCCCANA
ACTTTGCNCCNCCNTTGGGGGGGAGGTTTGGGGTTTTCAACTCCNGAANAAAAAGAGGGGC
CCCCCACCNNAGGGGNNTNNTTTNTTTTAAATTNGGGCCNNGGGGGGNTTNNANTTAAAAAA
NNGGGNTTTTNGGGGGACNNTTTTTTNTTTTNACCCCCCCCCCCCTTTTT
Sequence 333
GGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAACGTTGACCTTCCTTG
CCCAAGAATGAATGATTAAAAAGTTGAAAAGCTGTGTTTGTAGATCGTTCAGGCCTTCGT
CTGCAACTATCAGGAAATATGGGTAACTCTCTTCCAAGAAACTTCCCCACTCTTTTGATA
AGCATCTCGAAAATGTTGTTCGAACATCAATGGTGGTATTTTCTGAAGATGAAGAATTAA
AGCAGTTCTCAAAGAAAGAAGTTCAGGGAAGTTGAAATACGCATACTCGGCATCCTTGAA
GAAAACTATGGTGAATTGTCCTCCTTTGCTAATAAGATCCACAAGATAGCCGTTCAACCA
GATAGAAAAAATGGGAGGTNCCTGCCCCAGGCTTTAAANTGANTNNCNCCNCAGCATCCC
CTTGGGGATNNGGTAANNNCCNCCCCCCCNANCAAAAAAAAAAAATTTTTCCCCNCCNACC
NAATTNTGAAAAACCNNGNGGGGGGTTTAAAAATTTTGNGNTCNNAATTTNAAAAAAAAAA
AN
Sequence 334
CCGGGCAGGTACTAGGAGATATTGATTCTAGTCAATTAGGCATTGTAGACTGTCATGACC
ACTTAATAAAAAATTATGGACCTGAAGCTCACGAGCATCCAGATTTTATTATGATGTCAA
AAGATGCTGCAATTAAAGAAATGAATGAATATGTAGCAAAAGGAGGAAAAACTGTTGTTA

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CAATGGACCCTCCTAACGTTGGGCGTGATGTTTATCAAATGTTAGATATTGCAAAGAAAT
TAGAAGGAAAAGCTAACATTATTATGGCAACTGGTTTTCATAAAGCTGCATTTTATGACA
AAGGTGCTTCTTGACTTGCTTTGGCTCCAACAGATAAAATTGNAAAAATGGTTGTAGCTG
AAATCGAAGAAGGAATGGATGAATATAACTACAGCGGACCAGTTGTAAAAAGATCTAAAT
CCAAAGCCGGAATTATTAAAGC
Sequence 335
CTCCCCGCGGTGGCGGCCGAGGTACCGCGGGGAAATGCAAAAAAATCAANNCAGTNNANT
CNAATACATCACAGATGTTNAAGATTTCCCAATTGAAGGGATTGTATTTAAAGATATTTC
ACCACTTTTAGCAAATGGGAGANGTGCTAAATTACACAATTAATCAAATGGCTGAGTTAG
CTAAAGATGCAGATGTTATTATAGGTCCAGACGCAAGAGGTTTCTTGTTTGGGACACCTA
CTGCAGCTTTTTTAAAAAAACCTTTTATTATGGTAAGAAAACCTAAAAAATTACCAGGAG
ACGTTNTTAGTTTTGAGTATGATTTAGAATATGGTAAATCAACTCTAGAAATCCAAACTA
ATATGTTGAAAAAAGGC
Sequence 336
CTCCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACGCGGGGAAATGCAA
AAAAATCAAATCAATTTAATAGAATACATCAGAGATGTTAAAGATTTCCCAATTGAAGGG
ATTGTATTTAAAGATATTTCACCACTTTTAGCAAATGGAGAAGTGCTAAATTACACAATT
AATCAAATGGCTGAGTTAGCTAAAGATGCAGATGTTATTATAGGTCCAGACGCAAGAGGT
TTCTTGTTTGGGACACCTACTGCAGCTTTTTTAAAAAAACCTTTTATTATGGTAAGAAAA
CCTAAAAAAATTACCAGGAGACCGTTATTTAGGTTTTNGGGTNNAGATTTAAAATTGNGG
AAANCCCCNNTTNTAGAAATCCAAACTAATTNTGTTGNNAAAAGGGCCAAAAAGTNCCAA
TTATTGGTGATGTTTTAGCTACTGGCGGAACAATGAAAGCGATTATTAACTT
Sequence 337
CCGCGGTGGCGGCCGAGGTACCAATAATAGCAACCCTGTGATTTGTCCAAGTGCCCGGGA
GTGGAGGCCATCCTGACAACAGCTCTATGATTTTCTATGCCAATGACACAGGAGCCCAAC
AGTTTGAAAAGTGGTGGGATAAGTCCAGGACAGTCCCCTTTTATCTTGTAGGGCTCCTCC
TCCCACTGCTCAATTTCAAGTCTCCTTCATTTTTTTCAAAATTTAATATCCTAGGCACAG
TGTCTGTCCTTTATTTGATTTTCCTTGTCACCTTTAAGGCTGTTCGCTTGGGATTTCATT
TGGAATTTCATTGGTTTATACCAACAGAATTTTTTGTACCTGCCCG
Sequence 338
CCGGGCAGGTACCTGGAAGACTTCTCCACCTCGGGGGCCTGGCTGCCTCACAGGTATGAA
GACAACCACCATAACTGCTACTCTTACGCACTCACGTTCATTAACTGCGTTCTGATGGCA
GAAGGTAGACAGCAACTGGACAAGGGTGAATTTACGGAGAAGTACCT
Sequence 339
ATAAACTGCGGGATCTCAATGGCTTCTATGATCGTATTGAGGCAGTAGTTCCCACACTCT
GCCCGGTGCCAGCATGAAAGAGAACAGGGAGAGTCAGCCTTTCACAGTCCTTGTCAAATC
CCAATTACTCTGGTTGCAGATCACTTGAAGCCTGCCTTGTTTCTCTCACAAAGCTCTGCC
CGAGAGTCCAGCCCCGCGTACCTGCCCG
Sequence 340
GCGAATTGGAGCTCCCCGCGGNGGCGGCCGAGGTACAAGATAGTCATNTCAGTAAAAGGT
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TGCCNTGCACAGCTTGAAAAGCAATTAGAGTAAGCAAGATTAGTTTTTCCTCCCTTCCAG
TTCCTCAGCAGGCCTGGCTGAAGGCCCAGGAGGGAAGGAAATATAAGAACCAACAATAAA
AATAGCAATAGCAATAAGAAGAATGCCATCCCATGGAGCACACCATAATTCTGGAACCAC
CTNTCCCGGATCAGGCTTCCATTGCTCACGATGCTCACGCTGGGCAG
Sequence 341
TAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTCTAGGACAA
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GCTGAATCAATTGCAATTAAATTAGAAAACCGTGGATCATACCGTATGGCACAAAAATTT
GCAATTCGTTTAGCACAAAAAGCCGGAGCTAAAGGTATTAAAAACTAAAGTTAGCGGTCGT

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TTAAATGGTGTTGATATGGCTAGATCAGAAGGATATTCTGAAGGTGAAATGAAATTACAC
ACACTTAGACAAGATGTTAGTTATGCAACAGCAACAGCAAGAACAACTTATGGAGCACTT
GGAGTTAAAGTTTGAGTTTCATTAGGCGAAAGTATTTGCAAAGCAAAATCAAGCATATAA
TGAAGAAGAACCAACNCACAAAAAAGGGCCAAAAAGAGCAGCAAGAGTTAAAAAAGAA
Sequence 342
CCGGGCAGGTACCGCTGTGTCCGGGTGGGTGGTCAGAATGCCGTGCTCCAGGTGTTCACA
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TGTGCCCAACTGGGTTTCCCAAGCTATGTGAGTTCAGATAACCTCAGAGTGAGCTCGCTG
GAGGGGCAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTCTTGCCAGATGACAAGGTG
ACTGCATTACACCACTCAGTATATGTGAGGGAGGGATGTGCCTCTGGCCACGTGGTTACC
TTGCAGTGCACAGCCTGTGGTCATAGAAGGGGCTACAGCTCACGCATCGTGGGTGGA
Sequence 343
CCGGGCAGGTACCGCTGTGTCCGGGTGGGTGGTCATGAATGCCGTGCTCCAGGTGTTCAC
AGCTGCTTCGTGGAAGACCATGTGCTCCGATGACTGGAAGGGTCACTACGCAAATGTTGC
CTGTGCCCAACTGGGTTTCCCAAGCTATGTGAGTTCAGATAACCTCAGAGTGAGCTCGCT
GGAGGGGCAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTNTTGCCAGATGACAAGGN
GACTGCATTACACCACTCAGTATATGTGAGGGAGGGGATGTGCCTCTGGCCAC
Sequence 344
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTAAACTTTAATTAATGA
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TCCGCCAGTAGCTAAAACATCATCAATAATTGCTACTTTTTTGGCCTTTTTTCAACATAAT
TAAGTTTGGATTTCTAGAGNTTGATTTACCATATTTNTAAATCATTCCTCAAAACTAATA
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TT
Sequence 345
CCGCGGTGGCGGCCGCCCGGGCACGGTACCACTTGAATTATCTATTGAAAGAACTACTAC
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TTCATTATCTGAGCCGATAAGAAAAACTTTGACAAATGGAATATTTCTGTTTACTCAATG
TTCTTGAACTGGTTTAGAACGTGAAAAATTTTTAGGATTTGGTTTGGAAATAATTTTTCC
TCCTTGGATTAAAAAATAAAAAAGTGGTAAATCCACTTTCTCAGCAAAACAAAAATTATT
ATTAAAAATAATAACAAATTAGTATTTTGTAGCCTTTACCTATGAACACTTATTCATCAG
GTGAGAGTGAATCTTCTTTCTGCAATAATTTCTAATTGCCCCGCGTCCTTGGCCGCTCTA
GAACTAGGTGGG
Sequence 346
CACTACTATAGGGNGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTAGGA
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GGACCTGAAGCTCACGAGCATCCAGATTTTATTATGATGTCAAAAGATGCTGCAATTAAA
GAAATGAATGAATATGTAGCAAAAGGAGGAAAAACTGTTGTTACAATGGACCCTCCTAAC
GTTGGGCGTGATGTTTATCAAATGTTAGATATTGCAAAGAAATTAGAAGGAAAAGCTAAC
ATTATTATGGCAACTGGTTTTCATAAAGCTGCATTTTATGACAAAGGTGCTTCTTGACTT
GCTTTGGCTCCAACAGATAAAATTGTAAAAATGGTTGTAGCTGAAATCGAAGAAGGAATG

Sequence 347
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCGTAGAAGAAGAAGG
AATACCTAAAGAAACAGACATAGAAATCATCCCAGAAATCCCGGAAACTCTAGAGCCACT
GTCCCTTCCAGATGTGCTGAGGATCTCGGCAGTTCTGGAGGACACCACAGGCCAGCTCTC
TATTCTGAACTACATCATGCCCGTTCAGTACCT
Sequence 348
TNCTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTAAACTTTAATTAATG
AGCTAACGTCATATTTTTTAAGTTTTTCAATTCCGTTTAAAAATCCTAATTCAAGTAAAA

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AGATTACTTTATGAACAACAGCACCTTGAGATTCGATTAAGTTAATAATCGCTTTCATTG
TTCCGCCAGTAGCTAAAACATCATCAATAATTGCTACTTTTTGGCCTTTTTTCAACATAT
TAGTTTGGATTTCTAGAGTTGATTTACCATATTCTAAATCATACTCAAAACTAATAACGT
CTCCTGGTAATTTTTTAGGTTTTCTTACCATAATAAAAGGTTTTTTTAAAAAAGCTGCAG
TAGGTGTCCCAAACAAGAAACCTCTTGCGTCTGGACCTATAATAACATCTGCATCTTTAG
CTAACTCAGCCCATTTGATTAATTGTGTAATTTAGCACTTCTCCATTTGCTAAAAGGTGG
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Sequence 349
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TCTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTAAAACAGGT
GCTCCTGTTAAAATAGAAGATCTTGCAGCTACTTCTAGAGATTTAAATTCTAAACGATCA
ATAGCAGCGTATCCTGTTCCGGCTTTAATAATTCCGGCTTTGGATTTAGATCTTTTTACA
ACTGGTCCGCTGTAGTTATATTCATCCATTCCTTCTTCGATTTCAGCTACAACCATTTTT
ACAATTTTATCTGTTGGAGCCAAAGCAAGTCAAGAAGCACCTTTGTCATAAAATGCAGCT
TTATGAAAACCAGTTGCCATAATAATGTTAGCTTTTCCTTCTAATTTCTTTGCAATATCT
AACATTTGATAAACATCACGCCCAACGTTAGGGAGGGTCCATTGTAACAACAGTTTTTCC
TCCTTTTGCTACATATTCATTCATTTCTTTAATTGCAGCATCTTTTGACATCATAATAAA
ATCTGG
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Sequence 350
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TAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACATTCTTCACTATCA
CTGTCCTGTAAATTTAGTAGCCTTGGCTGGAAACACTGTAGTCGACATGATCTGATATTG
CTTAATATTTCAGAAAGAGACAGTCTATTTTCACAATGTTTACTGGAAGCATTGGTCCGA
GAGAAATTAGAAGAAAAGTCTATAGTTTGGGAAGAGCTTGAAAAACTATTCAGCATTTCA
GGGTCTATCTGTTTCAGGACTGGGTCATGTTCTGTGGATATTCGGTCCATTATGACCCTT
CCACCTCTGCCAATTCGCCTCCTTGCAAATCCTATACATCTTCTTGGGACTGTAAGTGTT
GTAAGGC
```
Sequence 351
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CTNCTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAGCTTGGTGACTGTA
ATTAACAACAATGTATTTTGAAAGTCACTGAGTAAATTTTAAGTGGTTTTTCCAAAAAAG
CACATAAGGTAATGCACCGTTAATTAGCTATATTGAGCCATTCCACAATGTATAGATATT
TCAAAACATGTTACACATGATAAATCCAGTTTTTCTACGTCATTTTTTAAAATTATATTT
AATTTTTTTATTTTGAAAGTTTTTTCACAGATCTTTTTTTTAGTATTATTACCTTCTGAT
ATATGTGTCATTATTGAAGAACCATACCTTTTAAAGGTATTATTTTGTAATTAAGGTATG
TCAACAGTAAAAAATAACCAGTGGCCCAGGCCATNGGGGCTCATGCCTGTAAATNCCAGC
ACTTTTTTCGGAGGCCCG
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Sequence 352
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CCGCGGTGGCGGCCGAGGTACCTGTGAAGACAGCTACACCTGGTTTCCTCCCTCATGCCT
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TCAAACAACCTCAGCCAGAGTGTCAATTTCTGTGAGAGAACAAAGATTTGGGGCACTTTC
AAAATTAATGAAAGGTTTACAAATGACCTTTTGAATTCATCTTCTGCTATATACTCCAAA
TATGCAAATGGAATTGAAATTCAACTTAAAAAAGCATATGAAAGAATTCAAGGTTTTGAG
GTCGGTTCAGGTCACCCAATTTCGAAATGGAAGNCATCGTTGCTGGGTATTGAAAGGTTT
GT
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Sequence 353
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CCTATAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTGTTTTATATTCT
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AAACCAAAAAAACAAAAACTTATTTTAGAAAGACTTGGATAATGATTGATTATAAAAAAA
TGATTGACCATACTTTATTAAAACCAGAAGCTACATCTAAAGATATTTTAAAACTTATTT
CACAAGCTAAAGAACATGGATTTAGAGGAGTTTGCATTAACTCTTCTTGAGTTAAATTAG
CAAAAGAAAAACTTGCAAATACAGATTTAGATATCGTTTCAGTAGTTGGCTTTCCATTAG
GTGCATCAAACACACAAACCAAGGTTTTTGAAGCAAAATTAGCAGTTGAACATGGAGCTA
CTGAAATAGATATGGTTATAAATGTGGGTAAATTCAAA
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Sequence 354
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTGTGCATGAAACCACACA
TACGGGCAAAAGCAGGAAGAGACTTTGCAGACATAAAAACCAGGTAAGTTTTGAGAGTCA
GGTGATTGCAAGATTTTTTTTTCTTTCATTGACACTTAGCTAATTTTGAGCCATATTTTT
AAATGTGTGTCTTTTCAGTTACTTGAAACCTCTTCTCCCACCTCCCATCCTTTCCAAACC
TCCTCCAAGCCAATTTTCCAGTTGGTTTAAAAGAAATCATTAGGGTGACCCCCACTCCCA
CTTTCTGGAACCTCAGGCAGAGCTCCTGGGGTTCCTCC
Sequence 355
NNTTTTTTTTTTTTTTTTTTTTTTTTGCGTGGAATCCTTCACCTCTTGCTAAAGGAACAGTAA
TGTCATATCCTGTTAATCTTGCAGGAGGCGCTAATAAGAATTCAAATGCTTTCTCATTTC
TCTTGTAATAATTTCAGTGAACTGAAAATGATTTAACAGCTTCGTGAACAACTAAAAGTC
TTCCAGTTTTTTTTAACAGAGTTAATAATTGTATCTGTATCTAAAGGAGAAATTGTTCTTA
AATCAATTAATTCTACAGAGTATTCTCCATTTAATTGTTTTAAAGCAGCTAGTGCTTCGT
GAACTTGTGCTCCATATGTTACTAATGTTAAATCAGAACCTTCTACTAATACATTTGCTT
TACCAATTTCAACTTCATAAATTCCTGCTGGAGCTTCTTGTTTGAATGAACGATAAATTT
TCTTAGGTTCTAAGAAAATAACTGGATCTGGGTCGTTAATAGCTGCGATTAATAATCCTT
TTGTATCATAAGGAGTTGAAGGCATAACAACTT
Sequence 356
AGGGCGAATTGGAGCTCCCCGCGGTGGGCGGCCGAGGTCTAAACTTTAATTAATGAGCTA
ACGTCATATTTTTTAAGTTTTTCAATTCCGTTTAAAAATCCTAATTCAAGTAAAAAGATT
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CAGAGCTAAAACATCATCAATAATTGCTACTTTTTGGCCTTTTTTCAACATATTAGTTTG
GATTTCTAGAGTTGATTTACCATATTCTAAATCATACTCAAAACTAATAACGTCTCCTGG
TAATTTTTTAGGTTTTCTTACCATAATAAAAGGTTTTTTTTAAAAAAGCTGCAGTAGGTGT
CCCAAACAAGAAACCTCTTGCGTCTGGACCTATAATAACATCTGCATCTTTAGCTAACTC
AGCCATTTGATTAATTGTGTAATTTAGCACTTCTCCATTTGCTAAAAGTGGTGAAATATC
TTTAAATACAATCCCTTCAATTGGGAAATCTTTAACATCTCTGATGTATTCTATTAAATT
GATTTGATTTTTTTGCATTTCCCCGCGTACCTGCCCGGGCGGC
Sequence 357
GAATGGGAGCTCCCCGCGGTGGCGGCCGAGGTACAAGATAGTCATCTCAGTAAAAGGTCT
ATTATCTAACTTGCCAAACTTGTTTACTGAGAGCCCTAAGGAACTAAAACTGCCATAATG
CCGTGCACAGCTTGAAAAGCAATTAGAGTAAGCAAGATTAGTTTTTCCTCCCTTCCAGTT
CCTCAGCAGGCCTGGCTGAAGGCCCAGGAGGGAAG
Sequence 358
AGGTACANGATAGTCATCTCAGTAAAAGGTCTATTATCTAACTTGCCAAACTTGTTTACT
GAGAGCCCTAAGGAACTAAAACTGCCATAATGCCGTGCACAGCTTGAAAAGCAATTAAGA
GTAAGCAAGATTAGTTTTTCCTCCCTTCCAGTTCCTCAGCAGGCCTGGCTGAAGGCCCAG
GAGGGGAAGGGAAATATAACGGAACCCAACAATTAANAAAATAGGCAAATAGCCAATTAAA
GTAAGGAATGGNCATCCCATGGGAGGCANCAACCATTAATTTCTTGGGAACCCACTNTNT
CCCNGGGATTCAGGGCTTCCATTTGCTTCACNGATGGCTTCACGTCTGGNGCAGCCCGCC
AACTCTTACTTTGCCAGGAAACCCTCACCTCAACTTTGCCCAGGGTATTTCTNCCCCGGG
TCTTGGAAANGAAAATGGGCTTCNTCCACCTGAAAAAGGGTTNGAATCCTTTCTTCCCAT
TACCCAGGCTTTCCNTTTAAAGCCAAAAAGGCAAATTCCCTCCTTTTTTGGCTTTTCCT
Sequence 359
CTAATTGATCCTGNTCACATTCAGTGAAATGGCATTGCATATTTATATGTTGCTNACAGC
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CTCTATGCACTCTTATATTCTGCCTTTCTGCCTGGAGTTTGAAATACATGTCTCTTTAGT
TTCTTTTGCACATGCTACATTGGGCTTTAGACCGGAGATAATACAGTGACTTTACCTCAC
AAATCATATTCTGTCAACACAAATCTATGAATTTAGTTTATTTAAAATCAGAACAATTTC
CTACAAAATTTTTCTGGAAAATAGACTCCTAACAGACCTACCAGAATCATGCTTAAAGTG
CTCCCTTGACACTTATTCTATACTGAAGGATAAATTTTAAA

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Sequence 360
CCGCGGTGGCGGCCGAGGTACAAGATAGTCATCTCAGTAAAAGGTCTATTATCTAACTTG
CCAAACTTGTTTACTGAGAGCCCTAAGGAACTAAAACTGCCATAATGTCGTGCACAGCTT
GAAAAGCAATTAGAGTAAGCAAGATTAGTTTTTTCCTCCCTTCCAGTTCCTCAGCAGGCCT
GGCTGAAGGCCCAGGAGGGAAGGAAATATAAGAACCAACAATAAAAATAGCAATAGCAAT
AAGAAGAATGCCATCCCATGGAGCACACCATAATTCTGGAACC
Sequence 361
TNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTGTTTTATATT
CTTCAAATCCTATTGATGAAAAACTTAAAGATGAATTAGAAAAATCTTATGTAATTAGAC
AAAAACCAAAAAAACAAAAACTTATTTTAGAAAGACTTGGATAATGATTGATTATAAAAA
AATGATTGACCATACTTTATTAAAACCAGAAGCTACATCTAAAGATATTTTAAAACTTAT
TTCACAAGCTAAAGAACATGGATTTAGAGGAGTTTGCATTAACTCTTCTTGAGTTAAATT
AGCAAAAGAAAAACTTGCAAATACAGATTTAGATATCGTTTCAGTAGTTGGCTTTCCATT
AGGTGCATCAAACACACAAACCAAGGTTTTTGAAGCAAAATTAGCAGTTGAACNTGGAGC
TACTGAAATAGATNATGGGTATAAATGGTGGGTAAATTTCAAA
Sequence 362
CCGCGGTGGCGGCCGCCCGGGCATGGTACAGCCTCTCGGCCCGGCTAAACATCATCGTCT
TGGTAGGCCATTACCATACCAACTAACTAATGTTCCGCACCCCCATTTTTAAGTGAAGCT
GTGAAGCTCCTTTCTATTACTCATCATGCGATAAATAACTATATCCGGTATTAGCTATTG
TTTCCAATAGTTATCCCAGTCTTAAAGGTAGGTTAGGTACCT
Sequence 363
CACTACTATAGGGNTNATTGGAGCTCNCCGCGGTGGCGGCCGTGCTGTTGCTTGGCCGCG
CGCCAGGCTGGCCAGAGGTGCTGTTCCACTGGGGCGTGGCCGTGATGGTGTGCGCCGATC
GACGTTCTGTTTTAATGAAAGGATGGACATGCAACTGACACTCGCACAACTCTTGGCAAT
CATGCCCAATGCCCGCTCCAAAGCGGGTATTTTTTTGCCTGCGCTAAACGTGGCCATGGC
GGAATTCGGTATCAACACGTCGGCGCGCCAGGCCGCGTGGCTGGCCACCATCGGTGTCGA
GTCCGGTAGCCTGCAGCGGGTAGAGGAAAACTTGAACTACCGCGCGGATCGCCTNCTCGT
TATTTTCGGAAAATACTTCACGCCGGCGTTGGCCGCAGCTTATTGCCGGCAAGCCGGAAA
TGATCGNCAACCGTGTTTACGCCAACCCGCATGGGGGAAACG
Sequence 364
AGGTACTAAACTTTAATTAATGAGCTAACGTCATATTTTTTAAGTTTTTCAATTCCGTTT
AAAAATCCTAATTCAAGTAAAAAGATTACTTTATGAACAACAGCACCTTGAGATTCGATT
AAGTTAATAATCGTTCATTGTTCCGCCAGTAGCTAAAACATCATCAATAATTGCTACTTT
TTGGCCTTTTTTCAACATATTAGTTTGGATTTCTAGAGTTGATTTACCATATTCTAAATC
ATACTCAAAACTAATAACGTCTCCTGGTAATTTTTTAGGTTTTCTTACCATAATAAAAGG
TTTTTTTAAAAAAGCTGCAGTAGGTGTCCCAAACAAGAAACCTCTTGCGTCTGGACCTAT
AATAACATCTGCATCTTTAGCTAACTCAGCCATTTGGATTAATTGTGTAAATTTAAGCAC
TTCTCCATTTGCTAAAAGTGGTGAAATATCTTTAAATACAATCCCCTTCAATTGGGGAAA
TCTTTAAACATCTCNGGATGGTATTCTATTAAAATTGAATTGAATTTTTTTGGC
Sequence 365
CCGCGGTGGCGGCCCGAGGTACCAAAATAAAGGGTATTTGCTACCTTTAATACTTGCCAG
TTCAGGTTGGAGGCACAGGCAGCAGCAAGAATGGAAAGAAATGTTCTTACAACATTTTCA
CAGGAAATGTCCCAGTTAATTTTGAATGAAATGCAAAGCTGAATATTCCAGTTTATTCA
ATGATTTTGTTGAATCTGAATTTTTTTTTGATTGATGGGGATTCATTACTTATCACATGTA
TCTGTGAGATATCATTTAAGCCTGGGCAGAACCTCCATTTCTTCTATCTGGTTGAACGCT
ATCTTGTGGATCTTATTAGCAAAGGAGGACAATTCACCATAGTTTTCTTCAAGGATGCCG
AGTATGCNTATTCAACTTCCCTGGACTTCTTTCTTTGAGAACTGCTTTAATTCTTCATCT
NCAGAAGAATACCCCATTTGATGTTCGAACAACATTTTCGAGATGCTTATCAAAAAGAG
TGGGGAAAGTTTCTTTGGAAGANGAGTTACCCCATATTTNCTGATTGTTGGCAGACGAAA
NGCCTTGAACGATCTACAAAACCNCAGCTTTTTAAACTTTTTAAATCNTTCAATTCCTTG
GGGCAAAGGGAANGNTNAACNTTTGGTACCTTGCCCGGG

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Sequence 366
CCGCGGTGGCGGCCCGCCCGGGCAGGTACGCGGGGAAATGCAAAAAAATCAAATCAATTT
AATAGAATACATCAGAGATGTTAAAGATTTCCCAATTGAAGGGATTGTATTTAAAGATAT
TTCACCACTTTTAGCAAATGGAGAAGTGCTAAATTCACAATAATCAAATGGCTGAGTTAG
CTAAAGATGCAGATGTTATTATAGGTCCAGACCCAAGAGGTTTCTTGTTTGGGACACCTA
CTGCAGCTTTTTTAAAAAAACCTTTTATTATGGTAAGAAAACCTAA
Sequence 367
AGGTACAGCCTCTCGGCCCGGCTAAACATCATCGTCTTGGTAGGCCATTACCCTACCAAC
TAACTAATGTTCCGCACCCCCATTTTTAAGTGAAGCTGTGAAGCTCCTTTCTATTACTCA
TCATGCGATAAATAACTATATCCGGTATTAGCTATTGTTTCCAATAGTTATCCCAGTCTT
AAAGGTAGGTTAGGTACCTGCCCG
Sequence 368
ACCGCGGTGGCGGCCGAGGTACGGCCACACTGGGACTGAGATACGGCCCAGACTCCTACG
GGAGGCAGCAGTAAGGAATTTTCCACAATGAGCGAAAGCTTGATGGAGCGACACAGNGTG
CAGGATGAAGTTNTTCGGAATGTAAACTGCTGTTATAAGGGAAAAAAANAAAAAAAAAAA
AAAAAAAGGTNCCTGCCCG
Sequence 369
GGCGGCCGAGGNACAATATAGNCATCGCNTTAAACNGCCNANTNTTAANCNCGCCAAACT
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GGCCCAGGAGGGAAGGAAATATAAGAACCAACAATAAAAATAGCAATAGCAATAAGAAGA
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GCCAAGGGAATTCNCCCCCGGGCCTGGAAGAAAAGGGNTCTCCCACCCGGAAAGGGGCGN
ACCTTTTCCCAAAACCAGCCTTTCCTTAAAGCNAAAAGCAAACCCNCTCTTTTGGGTTTC
NCAAAGGGGGCNGNACAAAAGGGAAGGGTTTTGGGGCNGGGGGGGGGGAAACAAAANCCCC
NCATTNGGAAGNTTGCCCCCGGCCGAGGGGAAGGGGAAAAGGTTGGNCCCCGGTTGGGGG
GGG
Sequence 370
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GAAATTCTTTCTCCCTATGTCCCAGCCTACCCCCACTTTACCGAGGCCAACAGCCGCCTC
AGAAACCAGATTCAGGAGCTAACATGCCCCAGGTCTCACGAGGATCAGAGACTCCAGAGG
CCAGGGAAGGAGANNAAGGTAGNCAAGCGGGGGTGGTCTCAAATCTGGTTGNGCTCGAGC
TATGCAAATGCCTCTCATGGAGATGCGAGGACCTATCTATTATGATGACCAGGGCCACAT
CCGGAGGGGGCAACAGACTTTCATNTATCAAGCCCTT
Sequence 371
AGGTACTATTGACTAAAGTCAGTTGGGGGAGAGAGAGGCGGAAGTATATTACTTTTATGC
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GAGTATTGATATCTGGGAGTCCCAGCAACAGTCTGAGGAGGTTCATGAGTTCAGAATATT
TTGATAATAACACTAAGATGGTATTTACTCTTCTAACTGGGTAGATATTTGCACTGGT
Sequence 372
CCGGGCAGGTACCGGGTCTAGGGAAGATGCAGAACACTTCAGCCTGGCAGAAGGCTCTAA
AGATCGTCAACCTTTCCTCTGTTCATTTTGAAATTTTTAAAAATATGCTAACTTAGCTGA
AAATCTCATGGAAACCAGGCTCCTCATCAGACTTGAAAGTCAAACCGGTTTCTCAACAAC
TTCTCTTTATGGTTCTGTATGGCTCCACAGAAAACCAGAAAAACATTTGGGGCAAGAAGC
TATGACTCTGTGAGGCCACATGGGAGCAGGCAGTCAATTATTACACTAAGGAACACCCAG
TTAGCATGAAGTATCCCATCACCTCGGTATTAAGCCCTGCATGCATTAGCTATTACCT
Sequence 373
ACTTTTTTTTTTTTTTTTGCTCAATAGAAGTATGGAATAATTCCAGGTAATTTAAAGCATA
TTTTTCAATTGGTGTAAGCTGCTCCATGAAGTCAGCTAGCTCCTCTAATTGGGATGGTTC
TTCATCACACGGCATGTTCTCAGAGTCTGATGACAGAGCATCAGTGTGTGGTCCCAGCAC

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CCCCTCCTGTGCGGACTTCTGGGCATCCTCCTCCAGATACTCAATACTCTTGAGGGCCTG
AGGAAAGTCTCTATGAAAGGTCTTGCAATTTTGGGTGCAATGGTTTCCGTGACAGAAGGT
TCCTGAGAAAGCACCACAAACTCCTCAGCTTTGACCGGGAAGCCAGCATCACGGACGCGT
GGGTCGAAGCTTGACCT
Sequence 374
CCGGGCAGGTACCGCTACTGAAATTATTAAACATACACTACAGATCAATTATATAANTAT
GTTAATATCTTTAGAAATCAAGAGTTGCAGCATAAGAGAAAGGGATACAAAAACAAAACA
AGCAAAGAAGTTACATAAAAACGTAACGTTGTATTGGAAAAACCAGTATGAACTTATGAT
TTAGTTTTCTTTCTAAAAACGGACGCGTGGGTCGAAGCTTGACCT
Sequence 375
NGCGNTGCGCTCACCTGCCCNCTTTCCANTCGAGGNAAACCTGGTCGTGCNAGGGTGCNA
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AAANAAAGGGCCCNNNCAAAAANNGGGCCCANGNNGAACNCNCCGTAAAAAAAAAG
Sequence 376
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CTGTCTCTTGAGCAATCTTTAGCCTCTCCCTTAGACTATCTCGTTCTGTGGTCATTCTTC
GTAAATCAGTAAAGGCTACATCTCTTTCAGTCTCCACTCGCCGGAGAATAGCATGTGCCG
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CTCNANNNGGCCCCTTTTTNNNNAANNGGGAAAAACCTTNGGCGGGNCCCNTTTNTATNA
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CNTTTTTCCNNTTTTCCNAANAAAAAANAAAANANNCGGNGNCCNGGAGGGGGAAANGNGG
GGGGGGG
Sequence 377
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CTGGCTTCCCGGTCAAAGCTGAGGAGTTTGTGGTGCTTTCTCAGGAACCTTCTGTCACGG
AAACCATTGCACCCAAAATTGCAAGACCTTTCATAGAGACTTTCCTCAGGCCCTCAAGAG
TATTGAGTATCTGGAGGAGGATGCCCAGAAGTCCGCACAGGAGGGGGTGCTGGGACCACA
CACTGATGCTCTGTCATCAGACTCTGAGAACATGCCGTGTGATGAAGAACCATCCCAATT
AGAGGAGCTAGCTGACTTCATGGAGCAGCTTACACCAATTGAAAAATATGCTTTAAATTA
CCTGGAAATATTNCATACTTTNTATTTGNGGCNAAAAAAAA
Sequence 378
GCCGGCCCGAGGACTCCAGCCTGGGCAACAGAGCAAGACTCCATCTCAAAAAAAAAAAAAA
AAAAAAAAAGTnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
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GCTGTTTCCTGNGNTGGAAAAATTGTTATCCCGCTCACCAAATTCCACACCAAACCATTA
CCGGAAGCCCCGGGNGNAGCCATTAAAAAAGGTGTNANANAGCCTTGGGGGGGGGTGCCCT
ANATGGAAGGTGGAGCCTAAACCTCACCATTNAATTTGGCCGTTGGCGCCTCACCTTGC
CCCGCTTTTCCAAGGTCCGGGGGGGAAAAACCTGGTCCGNGGCCAAGCTTGCAATTAAATT
GGAAATTCGGGCCCA
Sequence 379

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GAATTGNAGCTCCCCGCGGTGGCGGCCNNCCGGNCAGGTGGAAAGGTGGGTGGGGAGAGG
GAGGCTTATTTGTTGCTGCAGTGTAACTAAGTGAAACCTAATTCATATGACTCAAACTAA
GGTATATTTGGTTAGATCTAGGTGAGTTCTACTTTAGAGGAAATCCTGGTAACTGTTGTT
TGTTTGTAAGTTATAGCTGTAATTAATTTTCCCTGTATTCAAAGCCCCCAAACCCTGCAT
TCAGATACTATGCATTTAGACTTCCTTAGGCAAAGTCAAGGCAACAAGCTGATGATTCTA
AGCTATTATTCAAGGAGTATCTACCATCATAAAGGTGGTTTAAGTCATATAGGATAATAT
CAATCAATAATACAGGGAGATGGCAAAAATTTTTTGGGNAAANCCCAATATTANCTTGGG
TTTNATGACCCCCNAATCTCACACTTTGGGGNCNTATGGGAAAGGCTTTTTTTAAGACCC
GGGAGTTCAAGACCNGCCCTGGGCAACATTAAAAAACCTCCTTTNNNCCAAAANCTTTAA
AAAA
Sequence 380
TAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTTACAAGTCGACCCAC
GCGTCCGCTTCAGAATATCCAATTCATGTGAACTACAGGAAATTATAGTTTAGATATTTT
TAAATGATTTGCCTGTCACCGTATAACACAAGGGTGTCATGACCAAGCTAGATCTCTTTA
CCATATCATTAATAAAAGTCAAATTTTAAATTTGTGCCCAATTTGGCTGGGTGTGGTGGC
TCATTCCTGTGATTCCAGCACTTTGGGAGACCT
Sequence 381
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCC
GCATTTATTAAGGCTTGTATATGTTCAAGATCCAGTGAAGACTGTCTTGGGCGTGTATAA
TTGATCTTAACCACAAGGCTGAGAAGTTATGTGCAGGGCTTATGATGCTACTTCCAAAGT
ATTAAATCCTCCAGAGAAGCCTGTAGTGTGGGATGCAAACTATTTTAAGTGTGACCATGA
GGTGTTTTTTTGTGGACCATTTTAAAGCCAATGATAGGTTCTAAAGCAATCTCAACCTGA
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TACAAAGTAAATCTTCAAGGTGGATAGTTTATCCAAGTGTAAAATGTGTTGCACTAGGTC
AGCTTGGAATTTTGAGATGACTTTTGGCATCATTGCATACATCTGGTTTGTGTACCTGCC
CGGGCCGGCCGCTCTAGAACNGTGGATCCCC
Sequence 382
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTATTGACTAAAGTCA
GTTGGGGGAGAGAGAGGCGGAAGTATATTACTTTTATGCTTGGTTATACTAGAGAACAAA
TNGAAACTGACTAAAGAAACATTAGATCAGTGGTTCTCAGAGTATTGATATCTGGGAGTC
CCAGCAACAGTCTGAGGAGGTTCATGAGTTCAGAATATTTTGATAATAACACTAAGATGG
TATTTACTCTTCTAACTGGGTAGATATTTGCACTGGT
Sequence 383
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACATATCTGCATATACACCAT
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AATGTTCTTAATAGAGGAAAAAGGAATTGAATACATTTTTAAAAACAAAATAACAAAACC
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GTNATCACATAAATTCTGCAATCATNTGGNTATTNAGCTTNACNTGNTTTTTTTATTTGN
NGAANTTGTTGTTGTATTCAG
Sequence 384
ACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTTACAAGTCGACC
CACGCGTCCGCTTCAGAATATCCAATTCATGTGAACTACAGGAAATTATAGTTTAGATAT
TTTTAAATGATTTGCCTGTCACCGTATAACACAAGGGTGTCATGACCAAGCTAGATCTCT
TTACCATATCATTAATAAAAGTCAAATTTTAAATTTGTGCCCAATTTGGCTGGGTGTGGT
GGCTCATTCCTGTGATTCCAGCACTTTGGGAGACCT
Sequence 385
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTT

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TTAAGAAATAGGGTCTCACTCTGTCCCCCAGGCTGGAGCCATTATAGCTCACTACAGCTT
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CAGGAGATCGCTTGAACCGGGAGGCGGAGGTTGCTGTAAGCTGAGATCGCGCCATTGCTT
TCCAGCCTGGGTGCCAGAGCAAAACTCTGTCTCAAAAAAAAAAAAAAATAATAATAATAAA
TAAATAAAAAGGCAAGGAATATAGGGAAAAGTCAAAAGAGATGGACTGTGAGAAGACTGG
GAAAGCCAGAAGAATGGNGGAAAATGTAGCATGGAGTAAGACAATAAAAATATAAGAGGA
CTCATTTCGGACGCGTGGGTCGACTCACCTCGGCCGCTCTAGAACTAGTG
Sequence 386
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTTACAAGCTTCGACC
CACGCGTCCGGGAAATTTTAATTAAAAATAGGTGAACATTTTAAATGACCTAATACATAT
TTAGTCCACATTGAAACTTTGGCATTTTGTCATTGCCATTAAAATTTTGATGGCATTAAA
ATTTGATGCCATTAAAATTTTGATCAGTAGGTAGCATTTTTTTCTTAGCTACAATTGTTT
TTTTTAATTATAAGTATTAAAAATTCATGAAGATGATTCTTTTTGTAAAACAGTTTTGCA
TAAAAAGTAAGTCTCATTTTAAAGCAACTACCAACTTACTGGCCACCT
Sequence 387
AGGTCTTCGACCCACGCGTCCGATGGTTTTTGCAAAAATTGAAAATGCATCGATATTACA
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GAGTATGTCCACTCTGGTTTACTCCTTTGTAAGTATTAATACCTGATAATTTACATCCTA
CAGCCCTGCCTTTTTTTTTTTTTTTTCAAGTTTGTCCCAGCAAGTCTTGGCCCTTTGCATT
TTCTTAATACATTTTAGTACCTGCCCG
Sequence 388
CCGCGGTGGCGGCCGAGGTACAAAGAACAAAGGGAAGCTAAGGAAGAAAAGATAGTCAAT
AAAAGATGTCTCATCTGGGCTTAGTGGCTCATGCCTGTAATCCCAACACTTTGGGAGGCT
GAGGCTCGAGGACTGCTTGAGTCCAGGAATTTGGGCAAGTAGGAAATTACTGAACAGCTG
CTATCACAGACAAATGCCTAACATTGTGAAGTGCTACACAGGGGAAGGAGACCCACGCTA
AGAGGAGAGCATGCACCCAGCACACAGAACTCAGAGGACACAGTTCAAAACACACATACAA
GAGGCTTAGGCACCTGTGGGCGTGTGTGTGCTCACAGCCAGCAAAATGAAAAAAAATCCC
AGCTCTGAAGGAGAGGCAAGTGCATGGCTTCCGTACCTGCCCG
Sequence 389
ACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGA
TGGTTTTTGCAAAAATTGAAAATGCATCGATATTACAGTTAATTTTTTCAGTGNGTATGT
GGTATTAGGCTTAGAACTATAACACAGGAAGTTTTTAGAGTATGTCCACTCTGGTTTACT
CCTTTGTAAGTATTAATACCTGATAATTTACATCCTACAGCCCTGCCTTTTTTTTTTTTTT
TCAAGTTTGTCCCAGCANGTCTTGGCCCTTTGCATTTTCTTAATACATTTTAGTACCTGC
CCGGGCGGCCGGCCGCCCGGGCAGGTACNACTACCTCTTTAAAGTTGTCCTTATTGGAGA
TTCTGGTGTTGGAAANAGNAATCTCCTGTCTCGATTTACTANGAAATGAGTTTAATCTGG
AAAGCAAGAGCACCATTGGAGTAGAGTTTGCAACANNGANGCATCCAGGTTGATGGAAAA

Sequence 390
TCCCCGNGGTGGCGGCCGAGGTACTATTGACTAAAGTCAAGTTGGGGGAGAGAGAGGCGG
AAGTATATTACTTTTNTGCTTGGTTATACTAGAGAACAAATAGAAACTGACTAAAGAAAC
ATTNNATCATTGGTTCTCAGAGTATTGATATCTGGGAGTCCCAGCAACAGTNTGAGGAGG
TTCATGAGTTCAGAATATTTTGATAATAACACTAAGATGGTATTTACTCTTCTAACTGGG
TAGATATTTGCACTGGT
Sequence 391
AGGGCGAATTGGAGCTNNCCGCGGTGGCGGCCGAGGTCTTCNACCCACGCGTCCGATGGT
TTTTGCAAAAATTGAAAATGCATCGATATTACAGTTAATTTTTTCAGTGTGTATGTGGTA
TTAGGCTTAGAACTATAACACAGGAAGTTTTTAGAGTATGTCCACTCTGGTTTACTCCTT
TGTAAGTATTAATACCTGATAATTTACATCCTACAGCCCTGCCTTTTTTTTTTTTTTTTTCA
AGTTTGTCCCANCAAGTCTTGGCCCTTTGCATTTTCTTAATACATTTTAGTACCTGCCCG

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Sequence 392
CCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTTACCTGAAAATGCTTATTCTAGCTT
CACATTTGATTGTTTGGCTAAGAAGAAAATTATTTATTAGACTTAATTTTCCTCACGAGT
TTAAAGATTGCTTCAGATCTTAAACTTCTAATGAGGAAAGCTGAGAAGTCCAATGCCATT
CTGATTCTTGCAACTTACAAGTAGTCTTTTTTTGTCTAGACGCTTTCAGGACCTTCTTTT
TTCCTCAGTCAGTGTATCCAAACCTTCACAGTGATATCTTTTGGGTACCT

Sequence 393
CCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGCATTTATTAAGGCTTGTATATGT
TCAAGATCCAGTGAAGACTGTCTTGGGCGTGTATAATTGATCTTAACCACAAGGCTGAGA
AGTTATGTGCAGGGCTTATGATGCTACTTCCAAAGTATTAAATCCTCCAGAGAAGCCTGT
AGTGTGGGATGCAAACTATTTTAAGTGTGACCATGAGGTGTTTTTTTGTGGACCATTTTA
AAGCCAATGATAG

Sequence 394
GGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGCCCGGGCAGGTCTTCTACCCACGCGTCC
GCACATTTTGATGGTCAGTCAATAACTTAAGCAGTTACCAAAATACTAGGTATCCAAGGA
GCGAGAGGTGGGCGAGCATAAGAAACACATTTCTCATGGCACAGCTCTGCCAAAGCCCTG
CAGAATCATTTACACATAGGTCTTTGGTTAGTAGCCCCTGGCACAGAATTCTGATCTTAA
ACAAATATTGTCTATAATCAAGTAGAGCAATGCAATTAAAAAAAAAAAAGCACAGGTTTTG
GGGCCATGCTGAAATCCCAGCCTTGCTATTTGCTGGCTGTGTGACCGTGGTTCCTTGGTC
TCATTATGCTTTGGTTCCCGTATCTATAAAACGGACGTAATAATGTCTCCCTCTCATTAT
TGTGAAGTCGAAATGATGTCTGTAAAGTGCCCAACACAGTACTAAAGGGCTATT

Sequence 395
CCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGACCCACGCGTCCGTTTAAGTAACAT
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GTTTTTGTTTGTTTGTTTTATGTATATATGGTGGGTAGAAAATAAGGATTAATGAATGCA
GTAAGGTATTTGAGCACTCTTGTTTATCTTGTGTAGGTGCCAACCAAATATTTTTATAGA
GATGTGGTTAAGCCTCTTGGCATGTTCAACTGTGTACCT

Sequence 396
CCGGGCAGGTCTCTTGTCTAGTATACTCAAGGCAGCCTAGTAAATTATTATTTATCTATA
CAATACTGGAAAAACTTGTAGACAAAAACATGACTTGAATTGCTAAAAAAAAAAAAAAAA
NGANGGAGAATGAAAACTTCCGGACGCNTGGGTCGAAGCTTGACCT

Sequence 397
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCGCGCGTCCGCATTT
ATTAAGGCTTGTATATGTTCAAGATCCAGTGAAGACTGTCTTGGGCGTGTATAATTGATC
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TCCTCCAGAGAAGCCTGTAGTGTGGGATGCAAACTATTTTAAGTGTGACCATGAGGTGTT
TTTTTGTGGACCATTTTAAAGCCAATGATAGGTTCTAAAGCAATCTCAACCTGAGTTAGG
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ATTTTGAGAT

Sequence 398
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCGCCATGTTGGCTGGGCTGGT
CTCGAACTCCTGACCTCAAGTGATCTGTCCTGGCCTCCCAAAGTGTTGGGATTACAGGCT
ACTAAAGCTTTTTATTTATTTCTGTGGATTTGAGTTATTGTGTAGTGTCATTTATTTTTC
ATATGAAGGATTCCTTTTGGTATTTTTTGAAGAACTTCTTTATCAGAATTAATTATCTCA
CTTTTGAAAATTTTTAACAATCTAGAAACGTCTTTTTTTGTTTTTTGAAGAATAGTTTTCT
GGATGTAAAATTTTTGGTTAATTTTGTTTTTCTTTGAACACTGAATATTTAATCTTATGC
CTTCTGGCTTTCAGTACCTGCCCG

Sequence 399
CCGCGGTGGCGGCCGAGGTAGCTTGAGTCGACCCACGCGTCCGTTCAGATCCGTTTCAGA

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AACGTGAGTCTCTAGCTCAGGAGATTTCCACAACTGTCCTTAGTAACCTGATCTTATTCT
CATGTTTAACCTTGGCAGTGGGAAGTTCTTCCTGGTATCCTGCCTAATTTACTGGAGTTG
GCATTAATGCCATTTCCCCCTAAGGCGTGGCTCTTGGACCAGTATCACCTGAGAATTTGA
TAGACATAGACCCAGAGTTACTGAGGCAGGTGCTCTGTTTTGGGGACCAGCAATCGGTGC
TTTAGCAAGTTCTTTGGGTGATAGGGTTTGGAAACTACTGCTCTAAAGCATCATCTGTTT
TGACTTTGCCATGCACAATCTGAACTCACTCCCGTGAGGCCCTGCTCCTGATACTTTAAA
TCGTCCTGTCTCTTTTTCTGCCTCTCTGTGGAG
Sequence 400
CCGGGCAGGTACAGGCACCTATAGAATTTAAAGGGGAGATTTCTTTATTTTGTATTCAAT
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TGCCAATTCTAAAAAACCTTTTTTTTTTTTTTGTAGAGACAGGGTCTTATTCTGTCACCCGG
GCTGGAGTGCTCTGGTATGATCCTAGTTCACTGCAACCTCAAATACCTGGTCTCAAGCAA
TCCTCCCACCTCAGCCTCCCCAGTAGCTGTCTCTATAAGCATGCACCACCACACCTGGCT
AACCTTCTTATTATTTTTGGTAGAGACAGTCTCACTATGTTGCCCAGGCTGGTCTTGAAC
TCCTAACCTCAAGCAAACATCCCTCCTCGTGCTCCCAAAATGCTNGGATTACCAGCATTA
AGCCTTACAAGCATAAGCTACCATGGACTGGCTTTCNAAAAAATATTTGGTTTAAAATTC

Sequence 401
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AGATCTAGGTGAGTTCTACTTTAGAGGAAATCCTGGNAACTGTTGTTTGTTTGTAAGTTA
TAGCTGTAATTAATTTTCCCTGTATTCAAAGCCCCCAAACCCTGCATTCAGATACTATGC
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GGAGTATCTACCATCATAAAGGTGGTTTAGTCATATAGATAATATCAATCAATAATACAG
GAGATGGCAAAAATTTTTTGTGAAGAGCCAGATAGTANCTGAGTATGATGACCCCTAATC
TCAGCACTTTGGGAGGCTGATGGGAGAGGGTCATTTAAGACCAGGAGTTCAAAGACCAGC
CTGGGCAACATTAAAAAACTCCATTTCTACCAAAAACTTTAAAAAAAATTAGC
Sequence 402
GCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTCCGGGGAGGACCTAGGCAACGGCC
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TACCAACAGCCAGCACCAATAGGAAGATATGAATGAAGCCATCTGAGACCAGCCATCTGG
CAGCCAAACTGCCAACTGACTGCAAATGCATGAATGATCCCACTGACACCACGTAGAGCA
CAAATGAGTTGCCTCCACTGAGCCCAGCCCAAATTGTTATCCTATAAAATCATAAAAACA
TAAACAGTTGTTTTAAGTCAAAAAAAAAAAAAAAAAAAAGTGCGACCTGCCCG
Sequence 403
TACTATAGGGCGAATNGNAGCTNCCCGCGGTGGCGGNCGAGGTATTCAACAAGGGCCCTG
AGAGAGGGACAGGCAGCCCCTGTGAATCTTGCTGTTCAGCAGAGACAGGAGTCAGCACGT
GTGAGGGCAGCAGGGAAGTCTTCCTGGAGGAGTGAGACCTGGCGATGAGGAGGCACGGCA
GGGAGGTGGAACAGGCAGGAGAGACTCTTCAGGAATTGAGGAGATAGAATAGAGGACACT
AAAGCCTTAGAGAGGCCAGGGGTGGTGGCTTGGCAGGATCATCGCTTGAGGCTAGGAGTT
TAAAAGCAGCCTGGGCAACATAGCGAGACCCCATCTCTAAACACAAAAAATAAAAACCTG
CCCG
Sequence 404
CCGCGGTGGCGGCCGAGGTCAAAGCTTCGACCCACGCGTCCGTGATGCTGGCTTCCCGGT
CAAAGCTGAGGAGTTTGTGGTGCTTTCTCAGGNACCTTCTGTCACGGAAACCATTGCACC
CAAAATTGCAAGACCTTTCATAGAGACTTTCCTCAGGCCCTCAAGAGTATTGAGTATCTG
GAGGAGGATGCCCAGAAGTCCGCACAGGAGGGGGTGCTGGGACCACACACTGATGCTCTG
TCATCAGACTCTGAGAACATGCCGTGTGATGAAGAACCATCCCAATTAGAGGAGCTAGCT
GACTTCATGGAGCAGCTTACACCAATTGAAAAATATGCTTTAAATTACCTGGAATTATTC
CATACTTCTATTGAGCAAAAAAAAAAAAAAAAAAAGTGCGGCCGCTCTAGAACTAGTG
Sequence 405

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TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTCC
GGAAGTTTTCATTCTCCCTCTTTTTTTTTTTTTTTTTTTTTTAGCAATTCAAGNCATGTTTT
TGTCTACAAGTTTTTCCAGTATTGTATAGATAAATAATAATTTACTAGGCTGCCTTGAGT
ATACTAGACAAGAGACCTGCCCG
Sequence 406
TNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTAC
CTGAAAATGCTTATTCTAGCTTCACATTTGATTGTTTGGCTAAGAAGAAAATTATTTATT
AGACTTAATTTTTCCTCACGAGTTTAAAGATTGCTTCAGATCTTAAACTTCTAATGAGGAA
AGCTGAGAAGTCCAATGCCATTCTGATTCTTGCAACTTACAAGTAGTCTTTTTTTTGTCTA
GACGCTTTCAGGACCTTCTTTTTTTCCTCAGTCAGTGTATCCAAACCTTCACAGTGATATC
TTTTGGGTACCT
Sequence 407
CCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTTCTCTTATATTGAAGTAAAATTTA
AAATTTAATACTTTTTATTTTTTAAAAGCATGTATGGCATCATTTCAGTCTTATTAAATT
CTCTCTGCATCCATTCACCCATCCTTCTTTTTGTGTGTGTGTGTAGTGGTCTCTGTGAGA
GGGTTCATTAATGTCAATCCTGATCATTTCTTCCTCAAGAGATGTCAGTAGATTTGTTTT
TTTTGCTTTGGACTTTTATGAATTGATTGAATTTTTATGCCAATTATTTTTAAAGTATTA
CATAGAAGAACAAATGGACAGAAAAATTTAAATGCAATCAAATCTTGTTGATTTTGAAGT
ATAGGAAATAATCTTTTTTTTTATTATACTTTAAGTTTTAGGGTACCTGCCCGGGCGGCCG
CTCTAGAACTAG
Sequence 408
CCGCGGTGGCGGCCGAGGTACTATTGACTAAAGTCAGTTGGGGGAGAGAGAGGCGGAAGT
ATATTACTTTTATGCTTGGTTATACTAGAGAACAAATAGAAACTGACTAAAGAAACATTA
GATCAGTGGTTCTCAGAGTATTGATATCTGGGAGTCCCAGCAACAGTCTGAGGAGGTTCA
TGAGTTCAGAATATTTTGATAATAACACTAAGATGGTATTTACTCTTCTAACTGGGTAGA
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Sequence 409
TAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTTACAAGTCGACCCAC
GCGTCCGCTTCAGAATATCCAATTCATGTGAACTACAGGAAATTATAGTTTAGATATTTT
TAAATGATTTGCCTGTCACCGTATAACACAAGGGTGTCATGACCAAGCTAGATCTCTTTA
CCATATCATTAATAAAAGTCAAATTTTAAATTTGTGCCCAATTTGGCTGGGTGTGGTGGC
TCATTCCTGTGATTCCAGCACTTTGGGAGACCT
Sequence 410
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGACCAGTGCAAATATCTACCCAGT
TAGAAGAGTAAATACCATCTTAGTGTTATTATCAAAATATTCTGAACTCATGAACCTCCT
CAGACTGTTGCTGGGACTCCCAGATATCAATACTCTGAGAACCACTGATCTAATGTTTCT
TTAGTCAGTTTCTATTTGTTCTCTAGTATAACCAAGCATAAAAGTAATATACTTCCGCCT
CTCTCTCCCCCAACTGACTTTAGTCAATAGTACCT
Sequence 411
ACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACGCGTCCGA
TCACTTTTTTTCATTGATACCTTATTAGATAAAACATTAGCCCCCTAGAGTGNNNTGTGAA
GGAAATATGCCTAATAAGAGATGATAGTTTTAGCAATAAATGAGCATTAGAACTATTATT
TATTAATGAAATGAACTGGTGGTCTGAAAGTGATGATAAACAGACAACTGTGGAAAATGA
ATTATTAAAATTCCATGGAATTCCTTTTGAAGTTTATGAAGTACCTGCCCG
Sequence 412
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGC
ATTTATTAAGGCTTGTATATGTTCAAGATCCAGTGAAGACTGTCTTGGG
Sequence 413
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAACTTGTGATGCTT
TTGGCAGGAATTACAGAACAACCAATGCCATTCAAGTTGTGGAGATTATACTNGCAGGTG
AACTCGTAAAGAGAAGATTCTGGAATGCCTATATCTGAAAGCTTGAGTCGACACCTN

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Sequence 414
CCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGGAATGAGTGAGTGCAGAACTGGC
AACCAGAAGACAGGAACAAGGCCTGGGAATGGAGCGGAAAGGTAGCTGCTATATATAGTT
CCTTCAGCCAGTAACGATTAGAGCCAATAGCCATCTGGATGATGAATGGCTCCTAATTGC
CTTAAATTACGGCAGTTAGCTAAGGGTTTCTGTTGCTACATGGGTTACCGTAGGCCGCTG
CACCCTGCATAACTGTCCTCAGGCCTGCGTCCCCTGAGTCTCAGCACTTGGGCCTCCACC
TGCCCG
Sequence 415
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTCCCAAAGTGCTGGAA
TCACAGGAATGAGCCACCACACCCAGCCAAATTGGGCACAAATTTAAAATTTGACTTTTA
TTAATGATATGGTAAAGAGATCTAGCTTGGTCATGACACCCTTGTGTTATACGGTGACAG
GCAAATCATTTAAAAATATCTAAACTATAATTTCCTGTAGTTCACATGAATTGGATATTC
TGAAGCGGCCCCNTGGGTCGACTTTGTAACCTGCCCGGGCGGCCGNTCTAGAACTAGTGG
GATCCC
Sequence 416
TATGGCGAATTGGAGCTCCCCGCGGTGGCGGGNCGAGGTNAAGCTTCGACCCACGCGTCC
GATTATTCTCTCCATTTAGGCTATAAATCTTTCAGTGTAGGGTGTTTCTAATGTCNTATT
CTTCCAAAAAAAAAAAAAAAAAAAAGT
Sequence 417
CCGCGGTGGCGGCCGAGGTACTCTTGATGTCATAAGATTAGAAAATGTGGTTAATTGTCA
TCAACCCATTAAGTTCTTAAATGTCATTGAATGGAGTCCTTGTCATGTTACAGAGGAGCG
TAAAATTGTGGTTAAACATTTTTTTTAAAGATTACATGGTAGAGCCACAGTTTGTTATGCA
GAAGGAAAATTTAGCAAATATTATTTTGCTTAATAGCCTTTAAAAAATCGTATAAATTTG
ATTTGTAGTTTTATCCCCAGAGTCATTAGATTTTTCCAAAAAAAAAAAAAAAAAAAAGGT
Sequence 418
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTGCCAAAGCCT
TAACTTAGATTGTTACTTATGTTTCTAAATCTGNGGAAGCACATTTCCTTTTNTTNTNNT
TTTCTTTTACTGTTAATATCCTTATTCTCTATTTTACCAGTGGAGAATGNTTAGTATTAA
TTTCCATTTANCTCANGATTCAAGAAATGCAAAGTGCTATTTTTATCAAATTTCTGAAAG
CCTACTGTCTTCTGNTTTGGAAGTCCCACAACAGCTCTTTAATTTCCTTAAGCCCCACTT
TCCTCATCAGCAAGTTGGTGTGGCAATGGATCATAATAGGTTGCTGGGAGGATGAAGTGA
GCGGACCGCGTGGGTCGAAGCTTGTACCTN
Sequence 419
CCGCGGTGGCGGCCGCACTTTTTTTGTATTACTTCAACTTTTAAAAATTCTAAAGAAAAC
CATCATCTCAGACCAGCATTTCCGGACGCGTGGGTCGAAGCTTGACCT
Sequence 420
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTGTCAAACATCT
CCCTCGTCCGGATCCTTCTAACGCAGGAGTCTCAGACGCAAATGCCGGCAAGGGCCAGGC
AGGTGATGTAAGATGCGTGGAGCAGATGCCAAGCCACAGGGAGTGGTGGAGACTGGGGTG
AACTGGAAAGCACCT
Sequence 421
CCGCGGTGGCGGCCGCCCGGGCAGGTACACAAACCAGATGTATGCAATGATGCCAAAAGT
CATCTCAAAATTCCAAGCTGACCTAGTGCAACACATTTACACTTGGATAAACTATCACCT
TGAAGATTTACTTTGTATACTTCAAAAGATCTGGTCATGAAATTTTTAGCTAATACATAA
AGTGCCGAATTGAAATCCAGAATACAATAGCTATGAAGGGCCGCTAGAGTGCAGATAACC
AACCCATTCTACCTAACTCAGGTTGAGATTGCTTTAGAACCTATCATTGGCTTTAAAATG
GTCCACAAAAAAACACCTNATGGTCACACTTAAAATAGTTTGCATCCCACACTACAGGCT
TCTCTGGAGGGATTTAATACTTTGG
Sequence 422
GGTGGCGGCCGCCCGGGCAGGTGTCAAACATCTCCCTCGTCCGGATCCTTCTAACGCAGG
AGTCTCAGACGCAAATGCCGGCAAGGGCCAGGCAGGTGATGTAAGATGCGTGGAGCAGAT

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GCCAAGCCACAGGGAGTGGTGGAGACTGGGGTGAACTGGAAAGCACCT
Sequence 423
TNCTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACATAATATAC
AGAGGTATAATCTGTAACATCAATAATGTAAAGTGGGGAAGGGCAAGGTGGAAAAGGAGT
AGAATGCTTGTATGTGACTAAAATTATGTTGGTATCAGTTTAAAATATATTATTATAACT
TTAGAATGCTATACCCATTCCCACAGTAATTCCCATAGTAACCAAAAAGAAAATATCTGT
AGGATACACACAAAAGAAAATCAGAAGTAGATGCAAACTTGTCACTACAGGAAAAAAAAA
GCTATCAAAATAGAAAACAATAATGGAGAAAATAAGACACCAAAAGCTATAAGACTCACA
GAAAATAAATAATAAAATGGCAAAAAGAAGCGGACGCGTGGGTCGAAGACCT
Sequence 424
CACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTGTACAAAGCTTCGAC
CCACGCGTCCGATTTGGCAGAAATTCAGGGTAATGTCAAGGTTCTTAAATCTGAGAGAGA
CAAGATCTTCCTTCTTTATGAACAGGCACAGGAAGAAATTACCCGACTTCGACGAGAAAT
GATGAAAAGCTGTAAGAGTCCTAAATCAACAACGGCACATGCTATTCTCCGGCGAGTGGA
GACTGAAAGAGATGTANCCTTTACTGATTTACGAAGAATGACCACAGAACGAGATAGTCT
AAGGGAGAGGCTAAAGATTGCTCAAGAGACAGCATTTAATGAGAAGGCTCACCTGGAACA
AAGGATAGAGGAGCTGGANGNCCNTCCCGGGGGCCGGGGNCNGCCCGCCCCNNGCAGGGT
CANATGATTGCAGAATTTATGTGATTCCTGGGGT
Sequence 425
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTACTGAGCCACTTA
CAATTATTTCTGAAAAATCTCAGAGAACTGAGGATAGATCAGAAAATTTAAAGAAAGCAA
ATACCAAATTTTCAAACCAGGATAGGAAGTGAATACCTTGTAAATACACTTTGTTAAGTG
ATGATAATTCTGAGTAAAAATTTAGAAGATTTTGAGAAAAGCATTTGAACTTCTAGGGGC
CAATAAAATACCATGCAGAAGAATGTTTAAAAAGTCATGCCAAATTTGAATCCATTTGAT
CCTCAACCTCATCAGATGTTATATGCCAAACTACTTATTTTGGCTTAGATAATAATCATA
TAGAATGAAACTTTCCACAAATAGACTGTGGTCAGTGGCTG
Sequence 426
CCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGACCCACCGTCCGGCAATGATGAGCA
AAAACAAGTTTGGTCCCCCTGTTATAGNGCCTGGTAAAGGTTTTTGTTGTTGTTTTGCAG
GGGTGGGGGAACCAGGAAATCAGATCATCACAACAATATATACTTATCTGTAACTATGGT
AACTGCTACAGCAAAGGGGCGTATCATACTATTAGCATACTAAGTTTCACTTAAAGAGGT
CGGA
Sequence 427
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTGTCAAACATCTCCCTC
GTCCGGATCCTTCTAACGCAGGAGTCTCAGACGCAAATGCCGGCAAGGGCCAGGNAGGTG
ATGTAAGATGCGTGGAGCAGATGCCAAGCCACAGGGAGTGGTGGAGACTGGGGTGAACTG
GAAAGCACCT
Sequence 428
TANGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGACCCAC
GCGTCCGTGATAACTTCTCCTAAGTGCCAGGCATTGTATTACATGTTGGGAGCACAAAGA
TGAATAATAACAATAGGTTCACAGAAAGATGAATTGATTGAGAGAAAAAGAACCCTCCA
GGAGCCCTCAGCGTAGTAGGGGGTTGGTGTTGGAGGGTGGAGGAATGGAAAAGGCCCTGA
AATGCAGGCAGAGAAATGATGAAACAATTCAGGGGCTGTGGTGAGGTTAAATGAATATCT
TTACAGCAGCCTCNAAGACTGATCAGGTTACTATACCCTCTCTTNTGTCCACNGTGCATT
TNAA
Sequence 429
CCGGGCAGGTCAAGCTTCGACCCACCGTCCGGCAATGATGAGCAAAAACAAGTTTGGTCC
CCCTGTTATAGAGNCTGGTAAAGGTTTTTGTTGTTGTTTTGCAGGGGTGGGGGAACCAGG
AAATCAGATCATCACAACAATATATACTTATCTGTAACTATGGTAACTGCTACAGCAAAG
GGGCGTATCATACTATTAGCATACTAAGTTTCACTTAAAGAGGTCGGA
Sequence 430

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CCGGGCAGGTACACTCCAGCTCCTCTATCCCTTGTTCCAGGTGAGCCTTCTCATTAAATG
CTGTGTCTTGAGCNATCTTTAGCCTCTCCCTTAGACTATCTCGTTCTGTGGTCATTCTTC
GTAAATCAGTAAAGGCTACATCTCTTTCAGTCTCCACTCGCCGGAGAATAGCATGTGCCG
TTGTTGATTTAGGACTCTTACAGCTTTTCATCATTTCTCGTCGAAGTCGGGTAATTTCTT
CCTGTGCCTGTTCATAAAGAAGGAAGATCTTGTCTCTCTCAGATTTAAGAACCTTGACAT
TACCCTGAATTTCTGCCAAATCGGACGCGTAGGTCGAAGCTTGTACACCTCGGCCGCTCT
AGAACTAGTGGGATCCCCCGG
Sequence 431
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCCGCCCGGGCAGGTACGATTTAAAATCTC
CTCCTCCTACAGCGGTCGAGTATTGAAGCAGGTCTTTGAGGATGGGCNGGAATTAGAGTC
ACCAAAGGAGGAATACCCTCACAGTTTTCTGCAAGAGTCTCTTGAAACAATGGATGGTGT
TTATGGGTCTGGGGAAGACCCCNCGCCCCAAATGTTGCTCCCCT
Sequence 432
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACACACAAACACACACACAA
AGTTTAATATACTTTTTAAAAAATTTTATTGTATTGTTTTCTTGAAATAGGGTCTTGCTA
TGTTGCCTAGGCTGGTCTTGAACTCCTGGGATTAAGCAATCCTCCCAACTAAGCCTTCCA
AAATGCTGGCATTACAGGTGTGAGCTACCACAATCAGTCTCTTAGATTTTGTTTTTTAAG
AACAATTCGAAGTTTACTGCAAAATTGTGAAGAACGAACAGACTGTTCCCACATATCCCT
TTTTCTTTACACACCGGACGCGTGGGTCGAAGCTTGACCTGCCCG
Sequence 433
CCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGACCCACGCGTCCGGCTTGAGGTGGG
TTTAGGAAACATTTGGTATCTNTGGCAGGGACAGATGTTGACCTGGCCGGTCGGCAGCTT
TTACAAACCTAAGGACTTCAGGGTCCGGTTGCGCATGAGGACCGGGGAGGACAGAGCTGT
TTGCAATAGGTGTGGGCTTTTATAGCATTGTGAGCATTTCACGTTAGCGTAAGTGTTGCT
GCTGTGCAGGTGGTCTCTGGGGCTTACAATCTTCCCCAATGTTCTTCCCCACCCCTCCCA
CCATTCTGGTGAACAAGCCTCTTGGGATTCTTTGAAAAAAAAAAAAAAAAAACCT
Sequence 434
TAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACATAATATACAGAG
GTATAATCTGTAACATCAATAATGTAAAGTGGGGAAGGGCAAGGTGGAAAAGGAGNNGAA
TGCTTGTATGTGACTAAAATTATGTTGGTATCAGTTTAAAATATATTATTATAACTTTAG
AATGCTATACCCATTCCCACAGTAATTCCCATAGTAACCAAAAAGAAAATATCTGTAGGA
TACACACAAAAGAAAATCAGAAGTAGATGCAAACTTGTCACTACAGGAAAAAAAAAGCTA
TCAAAATAGAAAACAATAATGGAGAAAATAAGACACCAAAAGCTATAAGACTCACAGAAA
ATAAATAATAAAATGGCAAAAAGAAGCGGACGCGTGGGTCGAAGACCT
Sequence 435
CAGGTACAGGCACCTATATGAATTTAAACGGGGAAGATTTCTTTATTTTGTATTCAATGT
ATNAATAAGATTNTTAAAACATATTTTGGAGAAATNGCTAATTAGTGTATAATCCTGATG
CCAATTCTAAAAAACCTTTTTTTTTTTTTTGNAGAGACAGGGTNTTATTCTGTCACCCGGGC
TGGAGTGCTCTGGTATGATCCTAGTTCACTGCAACCTCAAATACCTGGTCTCAAGCAATC
CTCCCACCTCAGCCTCCCCAGTAGCTGTCTCTATAAGCATGCACCACCACACCTGGCTAA
CCTTCTTATTATTTTTGGTAGAGACAGTCTCACTATGTTGCCCAGGCT
Sequence 436
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTATTCAACAAGGGCCCTGAGAG
AGGGACAGGCAGCCCCTGTGAATCTTGCTGTTCAGCAGAGACAGGAGTCAGCACGTGTGA
GGGCAGCAGGGAAGTCTTCCTGGAGGAGTGAGACCTGGCGATGAGGAGGCACGGCAGGGA
GGTGGAACAGGCAGGAGAGACTCTTCAGGAATTGAGGAGATAGAATAGAGGACACTAAAG
CCTTAGAGAGGCCAGGGGTGGTGGCTTGGCAGGATCATCGCTTGAGGCTAGGAGTTTAAA
AGCAGCCTGGGCAACATAGCGAGACCCCATCTCTAAACACAAAAAATAAAAACCTGCCCG

Sequence 437
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCACGGTACCACGTAGCAAC

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ATATGAGTATTTCTCTAGATAACTTTTTTTTTTGACAAGGTCTCACTCTGTTGCCCAGGCT
GGAGTGCAATGGTGCAATCTTGGCTCACTGCAGCCTTGACCTTCCCTAGCTCAGCTGAAC
CTCCCATCTCAGGACACCATTGCCTCCACTGCCCATCCTGCATCTGCCTGCCTACCCCAA
AAGTGTTGAGAATACAAGCATGAGCCAGAGCCACGGAACCTGGCCTCTAGAGAGACTTTC
TATTTTAGTTTTTTCTTCTCTTATTTGTGAAGCCTTGAAAAAACTACTGTGGTTTATTTA
GATTCTGGTTTGTGACTTTTTTAAATAAACTTTTTATTTTGGAATAAATTTATGTTTAGA
GAATAGTTGCAAACATAATAAAGTGAGTTTTCATAAACGCCTTACCAGTTTCCCCTGNTG
GTTAACATTTTACATCACCATGCTGTTGCATTGGTCAAAACTA
Sequence 438
CCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGCATTTATTAAGGCTTGTATATGT
TCAAGATCCAGTGAAGACTGTCTTGGGCGTGTATAATTGATCTTAACCACAAGGCTGAGA
AGTTATGTGCAGGGCTTATGATGCTACTTCCAAAGTATTAAATCCTCCAGAGAAGCCTGT
AGTGTGGGATGCAAACTATTTTAAGTGTGACCATGAGGTGTTTTTTTGTGGACCATTTTA
AAGCCAATGATAGGTTCTAAAGCAATCTCAACCTGAGTTAGGTAGAATGGGTTGGTTATC
TGCACTCTAGCGGCCCTTCATAGCTATTGTATTCTGGATTTCAATTCGGCACTTTATGTA
TTAGCTAAAAATT
Sequence 439
TCGAGGCCGCCCGGGCAGGTACACAAACCAGATGTATGCANTGATGCCAAAAGTCATCTC
AAAATNGCAAGCNGACCTAGTGCAACACATTTACACTTGGATAAACTATCACCTTGAAGA
TTTACTTTGTATACTTCAAAAGATCTGGTCATGAAATTTTNAGCTAATACATAAAGTGCC
GAATTGAAATCCAGAATACAATAGCTATGAAGGGCCGCTAGAGTGCAGATAACCAACCCA
TTCTACCTAACTCANGTTGAGATTGCTTTAGAACCTATCATTGGCTTTAAAATGGNCCAC
AAAAAAACACCTTATGGTCACACTTAAAA
Sequence 440
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCCTAAAACTTAAAGTA
TAATAGTAATAATAAAAAAAGAGGTGCTTTTCTCCTAAGTCAACATTTTAGAGGAAAAGA
GTCAATTCAAGCAATTATCACATATGTGTAACTGAAGCACATATGTGTAACTTTTCAAGA
GTGATTAGATGGTCTGTTGTCTTTGAAGTGATAGTCAAATATCAGGTGTGTTCTAGGGAG
GTTGTGTAAGACTTTTGCTTGTATTCTCCCGGACGCGTGAGTCGACTCAAGACCTGCCCG

Sequence 441
CTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACG
CGTCCGATTATTCTCTCCATTTAGGCTATAAATCTTTCAGTGTAGGGTGTNTCTAATGTC
ATATTCTTCCAAAAAAAAAAAAAAAAAAAGT
Sequence 442
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTTACAAGTCGACCCACG
CGTCCGCTTCAGAATATCCAATTCATGTGAACTACAGGAAATTATAGTTTAGATATTTTT
AAATGATTTGCCTGTCACCGTATAACACAAGGGTGTCATGACCAAGCTAGATCTCTTTCA
TATCATTAATAAAAGTCAAATTTTAAATTTGTGCCCAATTTGGCTGGGTGTGGTGGCTCA
TTCCTGTGATTCCAGCACTTTGGGAGACCT
Sequence 443
CGCCCGGGCAGGTACACAAACCAGATGTATGCAATGATGCCAAAAGTCATCTCAAAATTC
CAAGCTGACCTAGTGCAACACATTTACACTTGGATAAACTATCACCTTGAAGATTTACTT
TGTATACTTCAAAAGATCTGGTCATGAAATTTTTAGCTAATACATAAAGTGCCGAATTGA
AATCCAGAATACAATAGCTATGAAGGGCCGNTAGAGTGCAGATAACCAACCCATTCTACC
TAACTCAGGTTGAGATTGCTTTANAACCTATCATTGGCTTTAAAATGGTCCACAAAAAAA
CACCTCATGGTCACACTTAAA
Sequence 444
ACNGNCAGGTACCAAGATTAAGGACAGAGTTCCCTCCATTGGTCATTGATTTGNAAACCA
AAATGTATCTGTGACAGGTATTAATCCGGACGCGTGGTCGAAGACGAAAGGACACGAGAA
ATANGGACCTANNCCGCTCTANAACTAGGNATCCCCNNNNCTGCAGGAATTCGATATCA

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Sequence 445
CCGCGGTGGCGGCCCGCCCGGGCAGGTGCCAAAGCCTTAACTTAGATTGTTACTTATGTT
TCTAAATCTGTGGAAGCACATTTCCTTTTCTTCTTCTTTTCTTTTACTGTTAATATCCTT
ATTCTCTATTTTACCAGTGGAGAATGTTTAGTATAATTTCCATTTANCTCAAGATTCAAG
AAATGCAAAGTGCTATTTTTATCAAATTTCTGAAAGCCTACTGTCTTCTGCTTTGGAAGT
CCCACAACAGCTCTTTAATTTTCTTAAGCCCCACTTTCCTCATCANCAAGTNGGTGTGGC
AATGGATCATAATAGGTTGC
Sequence 446
CGGGCAGGTACCCTTATTTTCCCTGATACAGCACAACTCTGCCTATTCTAATCATGACCT
AGACACATTCAATGAACTACAAGTTCTCCTTTACACGGACGCGTGGGTCGACTCCGGACG
CGTGGGTCGAAGACCTCGGCCGCCT
Sequence 447
CGAGGTCTTCGACCCACGCGTCCGCTTTCTTTTGTTGTTAAGGACCCATGACCTGCAGTT
TCCCTAACATTCATTTTTATACAGGGCAGAGGTATGTGTGCGAGCTCAGATACCTTAAAT
TCATATGCCTTTAATACAATCAGGCAGATTTCTAAATGAGGGATGCTTCCCCACAAATGG
AGAGTGAAAGTGGGCCAGCCTAAAAGGACCTCCATAGCACTGTGCATGGCCAGCTGTTTG
TGGCTGTACCTGCCCGnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnATCATGNTCATAGCTGNTTNCTGGG
TNAAAATNGNTANTCCGNTCANAATTTTTCACACANTCNTANNAACCGTTNCCTTNAATTG
TTNANNCCNGGGGGTNCCNAATTGGGNGNNCTNACTNAAATNAANTNGGGGTNGCTTNTNTT
GNNNNNTTTTTANNTNNGTTTANCCTTNTNNNCANNTTNNTTNTTNAAATTNGNNAAANN
CCNNGNGGGGGAGGGNNNNTTTNNNNNNTNNNGNNANNNTNNNNGNNNNNNNNGGNNNNNNN
TTNATTNNNNTCTNTNNNNNTNNTNNNNNNTANNNNANTTTNNNNTTNNNNNNNNNNNGGN
NNNNNNNNNNNNNTNNANNTTTANNNNAANNNNGGNNNNTNNNNNTTNNANTNNNNTTNG
NGTNGTTNTNTNNNNNNNANNNTNTNTTNNNNNNNNNNNNNNTNTNNNNTTTNNTTTNNNNA
NGNNNTTNTTNTTTTTTTT
Sequence 448
GCGGCCGCCGGGCAGGTTACAAGTCGACCCACGCGTCCGCTTCAGAATATCCAATTCATG
TGAACTACAGGAAATTATAGTTTAGATATTTTTAAATGATTTGCCTGTCACCGTATAACA
CAAGGGTGTCATGACCAAGCTAGATCTCTTTCATATCATTAATAAAAGTCAAATTTTAAA
TTTGTGCCCAATTTGGCTGGGTGTGGTGGCTCATTCCTGTGATTCCAGCACTTTGGGAGA
CCT
Sequence 449
CGCGGTGGCGGCCCGACCAGTGCAAATATCTACCCAGTTAGAAGAGTAAATACCATCTTA
GTGTTATTATCAAAATATTCTGAACTCATGAACCTCCTCAGACTGTTGCTGGGACTCCCA
GATATCAATACTCTGAGAACCACTGATCTAATGTCTTTAGTCAGTTTCTATTTGTTCTCT
AGTATAACCAAGCATAAAAGTAATATACTTCCGCCTCTCTCTCCCCCAACTGACTTTAGT
CAATAGTACCTCGGCCG
Sequence 450
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCCGAGGTGTCAAGCTTCGACCCACG
CGTCCGAAAGAGACCCCTGGGCTAGGGAGCCATTTGCAAGTCCCTCAGATGGCCTCAGGT
GTGGGTCATGCTCCACTGCAGCCATGGTTACTGGGAAGCCAAGTGGACTCCATGGGGCTC
CAAGCAGGGGAGGGAGCTCCTGGGAGACACAGTGTGGCCCAGATGCCCTGGTCATGGGGA
CATCCAAGCACAGGTGAGAAACTTGGGCAGGGAGGGTGCAGAGGAAATTTGGAAATGGCT
GAGAGGCTGGACTCAAGGTCTCTTGGGCTTGAACTGAGCTCAAGCAGTCCACCCACTTCA
GCTTCCAGGGTGCTGGGATTACAGTCGTGAGCCATGGCATCCGGCTGGACTCAAGGTCTC
TTGTTCCCTGATCCTGGGCTTGGCATGGAGAAGGGAGGAAGCTGAAGGGGGCAGGTAAAA
AGAT
Sequence 451
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCCGAGGTACAAGCTTCGACCCACGCG

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TCCGATTATACCCTAAAAAAGTAGAAAGATGGAATAATTAGGAGTAAAATTAGTGAAATG
GAAAGATATGTTATAGAAAGGACCAAGAAACGCAAAAGTTGGTATTTGAAAAGACTGAAA
AAATTCATGAACCTGTGAAAACAGTGGTCAAGAAGAAAAGAGAGGCATATTTTGATCTCT
GTTTTACATGTTACTCAATGTTCATTGCTGCCTCCCTTGTCCATAAAGTGCCTTTAGTGT
GTATGTTACTTTAGATTATCTTGGTGTCATCAAGCTTTACTCAGCAAAGAACCACTTTGT
TGTCTACTTTAAAACATAAGTTATCTTTAAAAGAATGGGTATCTTTTATAGTTCCATATT
AATGGCGAAGAAACTGCAGGTAACAGTGCCTTACCAGCTGGGTTTTGCTAACTTTTCTC
Sequence 452
CCGCGGTGGCGGCCCGCCCGGGCAGGTTTTATATTTTTTTCCTCTTTAAAAAATAATTTG
GTTTTGAATATTAAATTTACATATTTCTAAGTTAAATCAACATTCGTAGAGGAATTATCA
AAAAAAACTAGTAAGTCTGAAAAAAAAACCATATTTTATATTCTGAGGTCCCGGACGCGT
GGGTCGAAGCTTGACCT
Sequence 453
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCGGCAGGTACCCAACACAAACTA
TTCAATAAAGTAATCTGCTTTAAAAATAAAACACACTGAAAGGCCGAGGCAGGTGGATCA
CCTGACATCATTAGTTCAAGACCAGTGTGGCCAAACTGGTGAAAATTAGTCTCGACTAAA
AATCAACATTAGCTGGGCGTGGTGGCAGGCGCCTCTAATTCCAGCTACTCAGGAGGATGA
GGCAGGAGAATCACTTGAAGCAAGGAGGTGGAAGTTGCAGTGAGCTGAGATCGTGCCATT
GCACTGCAGCCTGGGCAACAGAGTGAGACTCCGTCTCAAAAACACCACCACCAACAAAAT
AAACACAACAGAATTATTCTGCAAATACAGATATTGGAGTAGCTGAGTTCCATCTCAAAT
TTGACTATGCAGGTTGACAGGTGATCTTGGCAAACTACTTATCCTTTCTGAAGTTCAACT
TTTTCACCAAATGGTATTGGGATACAACACTTGCTCTTGCCTATCTCACATGAATTATCC
ATTTTGGACAACTTGGTAAACTATA
Sequence 454
CCGCGGTGGCGGCCCGAGGTCCCAAAAGATATCACTGTGAAGGTTTGGATACACTGACTG
AGGAAAAAAGAAGGTCCTGAAAGCGTCTAGACAAAAAAAGACTACTTGTAAGTTGCAAGA
ATCAGAATGGCATTGGACTTCTCAGCTTTCCTCATTAGAAGTTAAGATCTGAAGCAATCT
TTAAACTCGTGAGGAAAATTAAGTCTAATAAATAATTTTCTTCTTAGCCAAACAATCAAA
TGTGAAGCTAGAATAAGCATTTTCAGGTAAAAAAAAAAAAAAAAAAAAAGT
Sequence 455
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTCTACAGCATCCTGATAA
CAGCCTCTGCCCTGGGAAACAGACTGTGACCATGCATTTCTAGTCCAGCATATCCTATCA
GAAGACCAAATGGCTTCATCAAAAACAGAGTGACAACCTCTTCTCTTTGCCTCTTCTGTG
CTTGTTAACAGGCAGCATTGGGGCAGGAGAGCCTGCAGGCCTTTCACGGCTGCTTGAGTT
CTCACCTGTTTGTCTGAGCTCTGATTCCTCTGCCCTGTAAGCGTAAAGGAGATGTGCTGA
GTGGAAAGACCTCTAAACAGGCAGCCAGGAAGCCAGATTTCAGGTCCATCTCTGCCTCTA
ACTGGCAGCTTTGCCTTGGGTAAATCATCAAGTGGGCAATAGTTTCTCTCCTGTAAAAGG
AAAAGATTGGGTTTAAGATTGTTTCTGAAGTTCTCTCTAGATTTAACCTGGAAGGAGTTG
AAATTGCTAACC
Sequence 456
CCGCGGTGGCGGCCGCCCGGCAGGTACAACATTTTACATTTCCAGGGACTGCAAAAATGT
TAGTTCCTTCCCCCATCATTTAGTTTGAAAATTCTTAGATAATTCTTTGCTGGTAAATTC
CAACAGAATAGTTAGCACACAGGTTCCACACACACAAGTTCTAGATAGGAATCTGAAGCA
CCACAATGAAAAGAACATTTAACATCTTTTAAAAATGTTTAATGTTATCAGAAAGATGTT
TGGTATATGTGTTCCATGCATGCTCCTGCTGGTTCTATTTGAAAAAGAAGTTTTTACAGT
TATCTGTTGTCACCATATTGTAAACGGACGCGTGGGTCGAAGACCT
Sequence 457
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCGGGCAGGTACAATAAATAGCA
TTCCCACGGTGACCACAAGTCTTGGAATCAGTTCCAGGTGTCGTCGTGGCCGTTGACACC
GCTGCCTTCTGACGGTAAATGTATTGTAGAATTCATGTTGTATCAGGCTTCAGTTTCCTC
ATTCTAAAATGAGAGGATTGGATAAGTTAGTAGTTTCTAATTTTTTACTTTTTAATCAGTGG

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CATCTCCCATTTATTTTTCATTTGAAATAAAACTTTTGAATTTTATCTTCTACCTAAATA
ACATATTTTGTTTTATGTTTCAAGATGAAGCTCACACTGAGTTGGAAAAAAGGAAAAAGC
·AAAGGATCAAAGCTGGGGGAAAATACTGGACCATGTGCTTCACCTCATGGTGCCAAATAA
AGAGAAAATGGGGAGAAGATAGGGACAGATAAAGATCTATTTGCTCGGATTGNGCTCTCA·
TCCTTGGCAACATGTTGACAATGCCCTGGAAATA
Sequence 458
CCGCGGTGGCGGCCCGAGAGCTCCAGGACGAAGGTATAAACACAGCAGAGGGCAGAGCCT
GATTTCAATCAGGGGCTACTCTAAGAAAGGCAGGAAACTAGATAAATACATTTAAAAGAA
ATTCCTCAGTGGCAGGGACAGTAGAGCAGCAGGGGGAGATCCCAGCACGGACAGGTAACA
·GTGTGATGTGGCAGAAAGGCTTTGGTTGCAAGTGGAGAACAGATGTCTCTGGCTGCCTCT
·GGCAGCTGCCTCCTTCTGGGCCTTGACTTTTCAAAGCCAGGCCAGGCCTCCCCCACCCTG
GACCACCTGTAGCTGGTTCAGAAGGCCCCAGGCTGGGCTTCATAGATGAAGACACAGCTG
ACTCAAGTCTCTGGCTCTGTCGGCTCTTGGCCACCTTGCCGCTCCCATAACGGTGTTTCT
CAGGTCAACCCCTCTTCTCCATTCCTACTTCAATGACCTCAGGTCAGGCCCTTGCCACTT
CTCTTCTGGACAAAGATGACAGCCCTTCACTGGTATCCTCGTCTNCAACCTAATTTATNC.
TTCACAGTGCTGGCAGAAGTGACATCTTTTAAACACACAACGACCCCN
Sequence 459
GCGGCCGAGGTCCGCACTTTTTTTTTTTTTTTTTTTTATTTTTACTCCAGAATTTTCCTTTA
ATATTTAGGACTCCAATCTTTACTTACAAAATAGCTTTTATTTACGTGCACATGATCGTG
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TTACAAACATAGTTGCTAGTTGAATGAGTAAAAGAGATTTCAAATTTCAATTCAAGGAGG
CATGTCTAAAAGACCAGACCATTCATTTGATGAAATTGTAAATGCCGATCATCCAACTTA
ACAGGAACTGCACATTTGTTCCTTTCTAGTTAGAAAAAAATAA
Sequence 460
CCGCGGTGGCGGCCCGCCCGGGCAGGTCTTCGACCCACGCGTCCGTGATTGCCTATTGTT
TGTTGATTGACTGATTTATGCCTCTAAGAGGAACTATCTTTTGATAATATTAAATAAGAT
GTCCTAATACAAAACTGATAGAGTTCAGAAATAATAAGAATCTCCTGGCCAGGCGTGGTG
GCTCACGCCTTTAATCCCAGCACTTTGGAAGGCTGAGGTGGGCGGATCACGAGATCAGGA
GATTGAGACCATCCTGGCTAGCATGGTGAAACCCTGTCTCTACTAAAAATACAAAAAAAA
TTAGCCCGGGTGTGATGGCGACCT
Sequence 461
CGCGGTGGCGGCCCGCCCGGGCAGGTACAGAAAGGACAAATACATCAGTAGAAAAGAAGA
CAATATAAGGGCAGATTGAAATATATACGTGAACGTCACAAAGACCAATTACTGCCATTT
CAATTCAATGAGGAAATAATGATGTATTTAATAAATAGTGCTAGAATGCTGCATTATCTG
·TCTAGGATGAAAAAAAAAAAAAAAAAAAAAGT
Sequence 462
.CCGCGGTGGCGGCCCGAGGTGGAATGTCTGTTTTCACAAAATTTTGTATTTTCTCCTAAT
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TTCTTGCTATTCTCAAATCGGAATNTCCAGACCTGGCTAGAAACTAAAGTCTAAGCCCAT
TCATTAAAGTCTTGAATTTATTTACTTTNGCCAAGAACAGCTATATAAAATTAGATTCCT
CCTGGTATAAΑΑΤTGGGTGTTTTCTTAGATATTNGCTATCAAAAGTCATTTTTCTTGGAA
ATCGGACGCGTGGGTNGAAGCTTGTACACCTGCCCGGGCGGGCGGCCGCACTTTTTTTTTT
TTTTTTTTTT
Sequence 463
CACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTGAAAG
CATACAACTGAGGGTTCACGGATTTCTAAGAAATGCATTTCCCTTGTCTATGTTCATCAG
CCTTTAATACTTTGGCTACAAGGCATATCAGAGAAAGGGAGGTTAAATTGGGTAATGACA
AAAGAACATATGTAACTCTGGAAATAGGAAAAATGTTCCAGAAATGGGATCAATGTGCCA
GCAATAAGCATAGTTCATTTCATTTGAAAATTCAGTTAAAGAGCCCAATAAACAGTTCCA
AACCGGACGCGTGGGTCGAAGACCT
Sequence 464

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ACTATNGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTGTCGACTCAAGCTTTCAG
ATATAGGGCATTCCAGAATCTTCTCTTTACGAGTTCACCTGCTAGTATAATCTCCACAAC
TTGAATGGCATTGGTTGTTCTGTAATTCCTGCCAAAAGCATCACAAGTTGTACCTGCCCG

Sequence 465
CCGCGGTGGCGGCCGAGGTAATAGCTAATGCATGCAGGGCTTAATACCGAGGTGATGGGA
TACTTCATGCTAACTGGGTGTTCCTTAGTGTAATAATTGACTGCCTGCTCCCATGTGGCC
TCACAGAGTCATAGCTTCTTGCCCCAAATGTTTTTCTGGTTTTCTGTGGAGCCATACAGA
ACCATAAAGAGAAGTTGTTGAGAAACCGGTTTGACTTTCAAGTCTGATGAGGAGCCTGGT
TTCCATGAGATTTTCAGCTAAGTTAGCATATTTTTAAAAATTTCAAAATGAACAGAGGAA
AGGTTGACGATCTTTAGAGCCTTCTGCCAGGCTGAAGTGTTCTGCATCTTCCCTAGACCC
GGTACCTGCCCG
Sequence 466
CCGCGGTGGCGGCCGCCCGGNCAGGTTACAAGCTTCGACCCACGCGTCCGGGAAATTTTA
ATTAAAAATAGGTGAACATTTTAAATGACCTAATACATATTTAGTCCACATTGAAACTTT
GGCATTTTGTCATTGCCATTAAAATTTTGATGGCATTAAAATTTGATGCCATTAAAATTT
TGAT
Sequence 467
CCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGACCCACGCGTCCGTGATAACTTCTC
CTAAGTGCCAGGCATTGTATTACATGCTGGGAGCACAAAGATGAATAATAACAATAGGTT
CACAGAAAAGATGAATTGATTGAGAGAAAAAGAACCCTCCAGGAGCCCTCAGCGTAGTAG
GGGGTTGGTGTTGGAGGGTTGGAGGAATGGAAAAGGCCCTGAAATGCAGGCAGAGAAATG
ATGAAACAATTCAGGGGCTGTGGTGAGGTTAAATGAATATCTTTACAGCAGCCTCGAAGA
CTGATCAGGTTACTATACCCTCTCTTCTGTCCACGTGCATTTC
Sequence 468
ACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCACAACATTCCCCCTT
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TTTTGATATGGTAATTTTAAAATAGAAACCCCTTCTCAGAACACCTGTATTCAAATGAGC
TGTGTAAAAAGACACCTTGTGGTACCTAAAATAGGTTTATGGTACCTATGGAATTGCTTC
TATTTTAGTGAAGATGGAATAAATTGCACCCATCCCACATTGTCAAGTAATGAAAATATG
CGGACGCGTGGGTCGAAGCTTGACCTGCCCG
Sequence 469
GACCTCTTTAAGTGAAACTTAGTATGCTAATAGTATGATACGCCCTTTTGCTGTAGCAGT
TACCATAGTTACAGATAAGTATATATTGTTGTGATGATCTGATTTCCTGGTTCCCCCACC
CCTGCAAAACAACAACAAAAACCTTTACCAGGCTCTATAACAGGGGGACCAAACTTGTTT
TTGCTCATCATTGCCGGACGGTGGGTCGAAGCTTGACCTGCCCG
Sequence 470
GCTCCCCGCGGTGGCGGCCGCCCGGGCANGGTTACAAGCTTCGACCCACGCGTCCGGGAA
ATTTTAATTAAAAATAGGTGAACATTTTAAATGACCTAATACATATTTAGTCCACATTGA
AACTTTGGCATTTTGTCATTGCCATTAAAATTTTGATGGCATTAAAATTTGATGCCATTA
AAATTTTGAT
Sequence 471
GCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGACCCACGCGT
CCGTGATAACTTCTCCTAAGTGCCAGGCATTGTATTACATGCTGGGAGCACAAAGATGAA
TAATAACAATAGGTTCACAGAAAAGATGAATTGATTGAGAGAAAAAGAACCCTCCAGGAG
CCCTCAGCGTAGTAGGGGGTTGGTGTTGGAGGGTNGGAGGAATGGANAAAGGCCCTGAAA
TGCAGGCAGAGAAATGATGAAACAATTCAGGGGCTGTGGTGAGGTTAAATGAATATCTT
Sequence 472
ATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAAGCTTCGACCCACGCGTCCG
GAGCGTTGCTTGGATTTCTAATTACTTCTAAGNGTAGTTTTATTTAATTTCAGTCCTTTA
GAAAAAANAAAATAAAANNAAATGTGCGGGCCCGGCCTGCCCGGGCAGGTNCCACNCGTT

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CGAAAAAAGAAAGAAAAAAAAAAAACTTTCTCTTTGCCANTTCTTCTTCTTCTTTNTT
Sequence 473
CTACTTAGGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTT
TCCTTTTGAGACACAGTCTCACTCTTGCCCAGGTTGGTCTAAAACTCCTGGGCTCAAGCA
ATCCTCCCGCTTTCAGCCTCCCAAAGTGCTGGGGTTACAGCCGTGTGCCACTGTGTCTGG
CCCTTTTCTTTTTCATAGGAGAAGGGTTGTTGACTCCCAGGAAACGTCACCTGGAACCAA
GAATGTGAACTCAAGGACCCCCGCCTGTTGGCAGCTGCATTTACTTGACTCCTGTTCACT
GTTTCTTAGCCTTGTCCTTTCTCTCCTGCCAGTTCTAGGGGACACTGCTTCTCCTGGTTG
ACCTCATCAATGCCCAACC
Sequence 474
CCGCGGTGGCGGCCGCCCGGGCAGGTACACAAACCAGATGTATGCAATGATGCCAAAAGT
CATCTCAAAATTCCAAGCTGACCTAGTGCAACACATTTACACTTGGATAAACTATCACCT
TGAAGATTTACTTTGTATACTTCAAAAGATCTGGTCATGAAATTTTTAGCTAATACATAA
AGTGCCGAATTGAAATCCAGAATACAATAGCTATGAAGGGCCGCTAGAGTGCAGATAACC
AACCCATTCTACCTAACTCAGGTTGAGATTGCTTTAGAACCTATCATTGGCTTTAAAATG
GTCCACAAAAAAACACCTCATGGTCACACTTAAAATAGTTTGCATCCCACACTACAGGCT
TCTCTGGAGGATTTAATACTTTGGAAGTAGCATCATAAG
Sequence 475
CTNCTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGACCNGTGCAAATATCTACCCA
GTTAGAAGAGTAAATACCATCTTAGTGTTATTATCAAAATATTCTGAACTCATGAACCTC
CTCAGACTGTTGCTGGGACTCCCAGATATCAATACTCTGAGAACCACTGATCTAATGTTT
CTTTAGTCAGTTTCTATTTGTTCTCTAGTATAACCAAGCATAAAAGTAATATACTTCCGC
CTCTCTCTCCCCCAACTGACTTTAGTCAATAGTACCT
Sequence 476
TTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAACGCTTCGACCCACGCGTCC
GGTTTGGGTGGAATTATAATATTTTAGATAAGATTTAAGAGGATTGCTAGATNGGAATGC
GAATGATGATAAGGCTTTTAGAGTTAGATAAGAGAGAGGGCGCTCTAGAACTAGTGGNTC

Sequence 477
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCACAACATTCCCCCTTCCC
CAAACAGTAATATGGACACTGATTTAACAAGACTTATAAAAAAATAAGGCACATTTATTT
TGATATGGTAATTTTAAAATAGAAACCCCTTCTCAGAACACCTGTATTCAAATGAGCTGT
GTAAAAAGACACCTTGTGGTACCTAAAATAGGTTTATGGTACCTATGGAATTGCTTCTAT
TTTAGTGAAGATGGAATAAATTGCACCCATCCCACATTGTCAAGTAATGAAAATATGCGG
ACGCGTGGGTCGAAGCTTGACCTGCCCG
Sequence 478
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTATACTAGAA
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TATTTTATAATCAAGTTTAACTGATGGTCTATGATAGTAGAGCGATTTAGTATTTTGACA
AAAATCTTATGAGACATGAAGTCATTCAATTTGCCGGACGCGTGGGTCGACTCAAGCTAG
ACCTN
Sequence 479
TTAGGGCAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGCTTT
CTTTTGTTGTTAAGGGCCCATGACCTGCAGTTTCCCTAACATTCATTTTTATACAGGGCA
GAGGTATGTGTGCGAGCTCAGATACCTTAAATTCATATGCCTTTAATACAATCCAGGCAG
ATTTCTAAATGAGGGATGCTTCCCCACAAATGGAGAGTGAAAGTGGGCCAGCCTAAAAGG
ACCTCCATAGCACTGTGCATGGCCAGCTGTTTGTGGCTGTACCTGCCCG
Sequence 480
ACTACTATAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTC
CGCTTTCTTTTGTTGTTAAGGGCCCATGACCTGCAGTTTCCCTAACATTCATTTTTATAC

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AGGGCAGAGGTATGTGTGCGAGCTCAGATACCTTAAATTCATATGCCTTTAATACAATCC
AGGCAGATTTCTAAATGAGGGATGCTTCCCCACAAATGGAGAGTGAAAGTGGGCCAGCCT
AAAAGGACCTCCATAGCACTGTGCATGGCCAGCTGTTTGTGGCTGTACC
Sequence 481
GACCTCTTTAAGTGAAACTTAGTATGCTAATAGTATGATACGCCCTTTTGCTGTAGCAGT
TACCATAGTTACAGATAAGTATATATTGTTGTGATGATCTGATTTCCTGGTTCCCCCACC
CCTGCAAAACAACAACAAAAACCTTTACCAGGCTCTATAACAGGGGGACCAAACTTGTTT
TTGCTCATCATTGCCGGACGGTGGGTCGAAGCTTGACCTGCCCG
Sequence 482
ACTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTATTGACTAAAGT
CAGTTGGGGGAGAGAGAGGCGGAAGTATATTACTTTTATGCTTGGTTATACTAGAGAACA
AATAGAAACTGACTAAAGAAACATTAGATCAGTGGTTCTCAGAGTATTGATATCTGGGAG
TCCCAGCAACAGTCTGAGGAGGTTCATGAGTTCAGAATATTTTGATAATAACACTAAGAT
GGTATTTACTCTTCTAACTGGGTAGATATTTGCACTGGT
Sequence 483
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGA
CCCACGCGTCCGTGATAACTTCTCCTAAGTGCCAGGCATTGTATTACATGCTGGGAGCAC
AAAGATGAATAATAACAATAGGTTCACAGAAAAGATGAATTGATTGAGAGAAAAAGAACC
CTCCAGGAGCCCTCAGCGTAGTAGGGGGTTGGTGTTGGAGGGTGGAGGAATGGAAAAGGC
CCTGAAATGCANGCAGAGAAATGATGAAACAATTCAGGGGCTGTGGTGAGGTTAAATGAA
TATCTTTACAGCAGCCTCGAAGACTGATCAGGTTACTATACCCTCTNTTCTGTCCACGTG
CATTTNAAAAACNTTGGCCGNTCTAGAACTAGTG
Sequence 484
CCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGATGGTTTTTGCAAAAATTGAAAA
TGCATCGATATTACAGTTAATTTTTTCAGTGTGTATGTGGTATTAGGCTTAGAACTATAA
CACAGGAAGTTTTTAGAGTATGTCCACTCTGGTTTACTCCTTTGTAAGTATTAATACCTG
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GGCCCTTTGCATTTTCTTAATACATTTTAGTACCTGCCCG
Sequence 485
CCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTTACCTGAAAATGCTTATTCTAGCTT
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TTAAAGATTGCTTCAGATCTTAAACTTCTAATGAGGAAAGCTGAGAAGTCCAATGCCATT
CTGATTCTTGCAACTTACAAGTAGTCTTTTTTTTGTCTAGACGCTTTCAGGACCTTCTTTT
TTCCTCAGTCAGTGTATCCAAACCTTCACAGTGATATCTTTTGGGTACCT
Sequence 486
ACTATAGGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGCCCGGGCAGGTGGAGGCCCAAG
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AACCCATGTAGCAACAGAAACCCTTAGCTAACTGCCGTAATTTAAGGCAATTAGGAGCCA
TTCATCATCCAGATGGCTATTGGCTCTAATCGTTACTGGCTGAAGGAACTATATATAGCA
GCTACCTTTCCGCTCCATTCCCAGGCCTTGTTCCTGTCTTCTGGTTGCCAGTTCTGCACT
CACTCATTCCGGACGCGTGGGTCGAAGACCT
Sequence 487
CTATNGGGCGAATTNTTNCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACGCGTCCGA
TCACTTTTTTTCATTNATACCTTATTAGATAAAACATTAGCCCCCTAGAGTGTTTTGTGAA
GGAAATATGCCTAATAAGAGATGATAGTTTTAGCAATAAATGAGCATTAGAACTATTATT
TATTAATGAAATGAACTGGTGGTCTGAAAGTGATGATAAACAGACAACTGTGGAAAATGA
ATTATTAAAATTCCATGGAATTCCTTTTTGAAGTTTATGAAGT
Sequence 488
CCGGGCAGGTACAAATCAAGTCATTAACATTTTCAATGTCAAAAATACAGCACGCTGTTA
AGAGTTCTGTCAGTGCTCATTATCCCACTAGATCCCACAAAGGGCAAACTCAAAAGATGA
AACAAAGGCAACGCCATCAATAACCACCATATTCCACAGGCTTTCTCCCCTAGGACGTAC

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CTN
Sequence 489
CCGCGGTGGCGGCCGCCCGGGCAGGTGGAAAGGTGGGTGGGGAGAGGGAGGCTTATTTGT
TGCTGCAGTGTAACTAAGTGAAACCTAATTCATATGACTCAAACTAAGGTATATTTGGTT
AGATCTAGGTGAGTTCTACTTTAGAGGAAATCCTGGTAACTGTTGTTTGTTTGTAAGTTA
TAGCTGTAATTAATTTTCCCTGTATTCAAAGCCCCCAAACCCTGCATTCAGATACTATGC
ATTTAGACTTCCTTAGGCAAAGTCAAGGCAACAAGCTGATGATTCTAAAGCTATTNTTCA
AGGGAGNTNTTTACCCATCATAAAGGNGGTTTTTAGTCATTATAGATAATATTCAATCAA
TTANTACCGGGGGGATGGCAAAAA
Sequence 490
CCGCGGTGGCGGCCGAGGTGTAATTTGGAGAATATTTAAAGCAAAAGAGCAAACAACAAA
AACTAAGTTAACACTTACCCAGTGCAGTAAGGGAATTGTAAGATACAGCCTGCTTAAGGA
GGTCTGCAGACAGATGCACCTAAGATTTCAGCTGTTTTAGGTCACTTTTCTCAAAATATT
TATTATCTGGCAATGGGGATGGGAGTGGGGAACACCTNTCTGTGAGGCAAATGGTATCTC
AACAAATACCGACTTTTCAAGGAAGAAAGCTCTCCACTTCTCTCATAAACTTATATACTA
CCTTAAACAGTATGCAGTATTCGCGGACGCGTGGGTCGAAGCTTGACCTGCCCGGGCGGC
CCGCTCTAGAACTAGGTG
Sequence 491
CCGGGCAGGTACAGCCTCACATACACAGATGCAGGTGAAGTCACCAAAGCTGATCTCTCA
TTCGTTCTGGGGACAGTTAGCAGCGTAGTGGTCCCACTGCAGCAAAAGTTTGAAATTCAT
TTTCTTCAGGAAAATACCCAGCCAGTCCCTCTCAGTGGAAACCCTGGTTATGTCGTGGGG
CTCCCATTAGCTGCTGGATTCCAGCCTCATAAGGGTGGAGCTCTCCCGTGTCAGCTCGTA
GCACAGAAGGTGAAGAGCCTGCTGTGGGGCCAGTGCTTCCCAGATTACGTGGCCCCTTTT
GGAAATTCCCAGGCCCAGGGACATGCTGGACTGGGTGCCCATCCACTTNATCACCCAGTC
ATTCAACAGGGA
Sequence 492
CCGCGGTGGCGGCCGAGGTACTATTGACTAAAGTCAGNTGGGGGAGAGAGAGGCGGAAGT
ATATTACTTTTATGCTTGGTTATACTAGAGAACAAATAGAAACTGACTAAAGAAACATTA
NATCAGTGGNTCTCAGAGTATTGATATCTGGGAGTCCCAGCAACAGTCTGAGGAGGTTCA
TGAGTTCAGAATATTTTGATAATAACACTAANATGGTATTTACTCTTCTAACTGGGTAGA
TATTTGCACTGGT
Sequence 493
ACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGTTAAAGGAATAATCTGCAGA
ACATCTTGATTTACAAGGGACAAAATGATGCAAATTATATGCTGTCCAACCTACTGGTGA
ACTGGATCAGAATGGTCCAAGGACTGTTAAACAGAGGAAGTATTTACATTTTGAAAACTT
GCGGACGCGTGGGTCGAAGCTTGTACACCT
Sequence 494
CCGCGGTGGCGGCCGTTAAAGGAATAATCTGCAGAACATCTTGATTTACAAGGGACAAAA
TGATGCAAATTATATGCTGTCCAACCTACTGGTGAACTGGATCAGAATGGTCCAAGGACT
GTTAAACAGAGGAAGTATTTACATTTTGAAAACTTGCGGACGCGTGGGTCGAAGCTTGTA
CACCT
Sequence 495
CTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCCTAAAA
CTTAAAGTATAATAAAAAAAAGATTATTTCCTATACTTCAAAATCAACAAGATTTGATTG
CATTTAAATTTTTCTGTCCATTTGTTCTTCTATGTAATACTTTAAAAATAATTGGCATAA
AAATTCAATCAATTCATAAAAGTCCAAAGCAAAAAAAACAAATCTACTGACATNTCTTGA
GGAAGAAATGATCAGGATTGACATTAATGAACCCTCTCACAGAGACCACTACACACAC
ACAAAAAGAAGGATGGGTGAATGGATGCAGAGAGAATTTAATAAGACTGAAATGATGCCA
TACATGCTTTTAAAAAATAAAAAGTATTAAATTTTAAATTTTACTTCAATATAAGAGAAA
AAAAAAAA
Sequence 496

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CGACTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTCTTCGA
CCCACGCGTCCGTAGTAATAGGGAATTAACTGACCCCTTTTGGATGGGGGAGAGCATCAG
GCTGGGGTCAGGTAAGTGTAAATGGCCTTCTGAGCATGCTCTTCTAGGCTGACTCCCAGC
CCTGACTTGAAACCATTAGCGCTAACTTGCTCTGTTTTGAGAAAAACTTTCCAAACTTTT
GCATGAGAAACTAGAAAAAGGAATGTATGCCACGTAACTGGATTACAGAAATGAGTTAAT
TGTCTCTGTGATAAAAAAAAATGAAATATTTTCTTATTGAATTAATATTTTTGTCTTGA
AGCATTTTCTAGTGATAGAATGTATTTGTCTTTTTTCCTGGGGGGNACCTCGGCCGCTCT
AGAACTAGTG
Sequence 497
CTACTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCCCCAGGTC
AGCACTTTGAACACTTGAACATCTATGAAATCACATAGTAAAGTGATAGGAGATGGGGCT
AAGCTTTTAATGGCCTTTAGACATAGCATTAGACATAACCTAAGCTGAAAGGCTTTGGGA
AGTTGTTGTGTTAAATCCCCAACACACTCTCGTGTTTTCTTAGGACTTGCCTNTTATTTA
AAAAAAAAAAAAAAAAGTTGCGGCCCGCTCTAGAACTAGTTGGATCCCCCGGGCTTGCAG
GN
Sequence 498
CCGCGGTGGCGGCCGAGGTACCCTTTTATAAGGGTGTATCCCCTTTTGGTAACTTACTGT
TTGTTAATTTGTAGTGTTCCCTGCCAGTAAGCTTGTAACACTCTAGTGACTCACCTTCGG
GTGGGAGGGTAGGAAAGGGAGAGGCCTGCCTCCTAAACCTGGGAAGATGGGGAGAGAGTG
GTAAACCTGAGAGCCCAAAAAACAAACCAAACAAAAAAAAAAAAAAAAAAAAAAGT
Sequence 499
AGGTACCCAAAAGATATCACTGTGAAGGTTTGGATACACTGACTGAGGAAAAAAGAAGGT
CCTGAAAGCGTCTAGACAAAAAAAGACTACTTGTAAGTTGCAAGAATCAGAATGGCATTG
GACTTCTCAGCTTTCCTCATTAGAAGTTTAAGATCTGAAGCAATCTTTAAACTCGTGAGG
AAAATTAAGTCTAATAAATAATTTTCTTCTTAGCCAAACAATCAAATGTGAAGCTAGAAT
AAGCATTTTCAGGTAAAAAAAAAAAAAAAAAAAGT
Sequence 500
CCGCGGTGGCGGCCGAGGTACTATTGACTAAAGTCAGTTGGGGGAGAGAGAGGCGGAAGT
ATATTACTTTTATGCTTGGTTATACTAGAGAACAAATAGAAACTGACTAAAGAAACATTA
GATCAGTGGTTCTCAGAGTATTGATATCTGGGAGTCCCAGCAACAGTCTGAGGAGGTTCA
TGAGTTCAGAATATTTTGATAATAACACTAAGATGGTATTTACTCTTCTAACTGGGTAGA
TATTTGCACTGGT
Sequence 501
CCGCGGTGGCGGCCGCCCGGGCAGGTCAGGAGTGTCCCAAAGATTTCCCAAGTCCAGCCC
AGAGAAGCTGAAAGCCTTTCCCCCAGGTGTGGGGCTGAGTTAGATGTGGGTCATAAAGGA
TGTGGCCTCGAGGCTGGGAGGCAGCTGGGCAAAGTGGGAAGCCTCCCTACTCCTGAGACA
GTGATGGCTCAAATCCAGGCCAACCTGGAACATGATCCTCAACTTCTCTAAGTTCACCTT
TCCCAGGTGTGAAATGGGTTGTTCTGGGAATTGAGTGAGCTAATGATACACTCCCTGGCA
CACAGCGAGCCTNAAAACGCTTGTGTCCCCTCCCTACCTCACAGCCCATTTTAGAAGTTT
GCTGTCACTTA
Sequence 502
GACTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTTTTCTTA
TGAGTGGGAGGTGACTGATCGTGGAGGTGGATTTCTTATGAGTGGGAGGTGACTGATCGT
GGAGGTGGATTTCTTATGAGTGGGAGGTGACTGATCGTGGAGGTGGATTTCTTATGATTG
GCTTATCACCATCCCTCCTTGGTGCTGTTTTTGCAACAGTGAGTGATTTCTTGTGAGATC
CGGTTGTTTAAATCCANAGGCACCTNCCCCTACCCTCTAGCTCCCATTCCTGCCATGTAA
GACACCTGCTCCCCCTTTTTCTTACCCCATGATTGGAAGCTTTTTTTGAGGCCTCCCCAGA
AGCTGATGCCAGCCCTATGCTTCCTGCACAGCCTG
Sequence 503
CTACTATAGGGCGATTGGAGCTCNCCGCGGTGGCGGCCGAGGTTTTTGAAATGCACGTGG
ACACGAAGAGAGGGTATAGTAACCTGATCAGTCTTCGAGGCTGCTGTAAAGATATTCATT

TABLE 1
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TAACCTCACCACAGCCCCTGAATTGTTTCATCATTTCTCTGCCTGCATTTCAGGGCCTTT
TCCATTCCTCCACCCTCCAACACCAACCCCCTACTACGCTGAGGGCTCCTGGAGGGTTCT
TTTTCTCTCAATCAATTCATCTTTTCTGTGAACCTATTGTTATTATTCATCTTTGTGCTC
CCAGCATGTAATACAATGCCTGGCACTTAGGAGAAGTTATCACGGACGCGTGGGTCGAAG
CTTGACCTGCCCGGGCGGC
Sequence 504
CTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAAGCTTCGACCCACGCGTC
CGAAATTCTTGGTTAAGGATTATTATAAAATAGAATGGTATTTCAGTAAATCCCTGAGGC
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TAGGAACACAGAACATATATTTAGAGCTAGAAAATATACAGCTTCAGACCAGGCAAAGTG
CTGGGATTACAGGCGTGAGCCACCACGCTCGTCCTCACATGGGGTTTTATTATTAGGATG
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Sequence 505
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ATCATTATTCTAAGAGCCAGATACTATAGCCTGTATTTTATGATTCACTTTCAATGAAAT
TCTACAATAGACAGAACTATCTATCAACAGAAAGCAGATCAGTGGTTTTCTGCAGCCAGA
GGTATGAAAGGTTTGAAACATGTGGCACCAGTAGGACATATGGAAACTTTTTTGGTGTGA
TGGAAGTATTTTTTTATCTTGATTGTGTGGTGTTTGTTATACAGTGGTATACATTTGACC
T
Sequence 506
GGGGCGGCCGCCCGTTCAGGTACACGTNTTTNCCAACCAATTTTATANGNATATATATAT
TCTACTTCCAACACCCNTNTTCATCCTGGTNCAATCAAAGCCTGGTTNTGGCCAACAANA
AACTCGTCAGGAGATCGAAGGNTGTAGATGTCTGCACGTGGCTTCCTTGGAGGTCCAGNG
GNGACTCCCTCTTCCAAAATCCATTCTGTACCCGCTGGCTGCTCTAACGGGCAGGACAAC
AGCGTATGAAGCCTGACTGCAACTAGGAGAAGTACCACACTCCCGGACGCGTGGGTCGAA
GCTTGTACACCT
Sequence 507
GGCCGAGGNCAAGCTTTTACCCACGCGTTTGAANCCATCTGTTTGGNACCCNGAAAGGGG
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NNNNCCCACCTGNCCAATGGGACCCTTTCTGNCCTCACCCTACAAGGGGCACAAAGGGAA
GACACCAAACCTGGCAGGAACTTTTCACGCAATCAAGGGAAGGAAAGGCANTCCTGGCAG
AGGGAACAGCANGCCAAGCGGGAGAAGGCTCAAAGTAAGGAGGGTAAG
Sequence 508
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Sequence 509
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Sequence 510
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TTTAAACTCGTGAGGAAAATTAAGTCTAATAAATAATTTTCTTCTTAGCCAAACAATCAA
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Sequence 511
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GGGTATGGGTTTTAAAGCTGGTACCTNGGCCCGNTCTAGAACTAGGTG
Sequence 512
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ATGATATGGTAAAGAGATCTAGCTTGGTCATGACACCCTTGTGTTATACGGTGACAGGCA
AATCATTTAAAAATATCTAAACTATAATTTCCTGTAGTTCACATGAATTGGATATTCTGA
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Sequence 513
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TCTAGGATGAAAAAAAAAAAAAAAAAAAAAGT
Sequence 514
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Sequence 515
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Sequence 517
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Sequence 518
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AATGCTGCTGTTCTACCTGAGATGGGAAAAATGAAAGCAAAATAACATCAACAAAAACAA
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TGTGTACCTGCCCG

Sequence 519
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Sequence 520
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Sequence 523
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Sequence 524
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AATCGTAAGGAAGCTGTTTCTTTTAAAACACAAACCACCACCAAAAATTTAAATGTACCT
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Sequence 525
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TGAATT
Sequence 526
·CCGCGGTGGCGGCCGAGGTACCAAAACCCGGCTTTTTTCGAAATACCTGCAAAAAAAAGT
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GCCTGTCTTGAATTAGGTAATGCATTAAAGAAAAGTAGGATTATTATATTCCAATTCTTT
CCATCAGATGTAAAACATTATTGGTAGATCACATCTGTTTTAATAAATCTGTAAGAAAGA
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TCTAAATATTGTTGATTTAGATAACCACCCTAGATTTCTCACCACCCTAGAACATTTAGT
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Sequence 529
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Sequence 531
CTACTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTAATCCCGTCTTAC

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ATCAGAGAAT
Sequence 532
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Sequence 533
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GCCTAGCCTACAGTTTTTTAATTTTATAAAATGTTATTTCTAATTTTTCTCCAAAAGTAA
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Sequence 534
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Sequence 535
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Sequence 536
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Sequence 538
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AGGCCCTGA
Sequence 539
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CAGTAGGTTGGACAGCATATAATTTGCATCATTTTGTCCCTTGTAAATCAAGATGTTCTG
CAGATTATTCCTTTAA
Sequence 540
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TTGTTTTCCTAAGATATGAAATGCCTGCCAGTATACAAACTGTTGTAACTACTTCCCTTT
TTGCTTTTAGCGGGGAAAAAATAGCTTAATGACAGCATAGAATCATGTAGTAAATATAAT
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GCAAACATGTCATCACTCCCTT
Sequence 541
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GGCCATATTTGTAAATAAGGTATTTGCGGGTGTAATCAGTTAAGGATCTCAAGATAAATT
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GGAGACAGAATAGAGCCATCTGAAAAGGGTCAGAAA
Sequence 542
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CCTGTGAGTTAGCCCTTATCCTCAAGGAGCAGCTTAAAAAAAAAAAAAAAAAAAANGT
Sequence 543
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TACACTCAA
Sequence 544
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Sequence 545
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Sequence 546
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Sequence 547

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TACTATAGGGCNATTGGAGCTCCCCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTT
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Sequence 548
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Sequence 549
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Sequence 550
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Sequence 552
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CTGTTTTTCCCTCTCCCCTACCTTGTCCCCCCTATTAAAATANAAACNGGGGATTGATTAA
TGTCCCGCTCCTGAATACATGTAAAATTTGTACCTCGGCCGNTCTAAAACTAG
Sequence 553
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTC
CGCTTGTCAATAAAAAACAAACAATTGCTAAATAAAACAACCTGAGAAAATCTCCAGAGA
ACTATACTGAGTGAAGGAAGAAAAATCCCCAAAGATTACACACTGTATGTCATTTATATA
ACATTCTTGAAATGACACAATCACAGAAATAGAGAATACTGGTCACTANTGCATTAAGGA
AGGTGTGGAAGGATGTAGTGATGGGAGGAAATGTGTATGGCTGTAACAGGGCAACAGAGG
CNTCATTGTGATGATGGAAGTGTTCTGTNTCTTGGGTTTTTTGAATGTCA
Sequence 554
CACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGTTAAAGGAATAATCTGCAG
AACATCTTGATTTACAAGGGACAAAATGATGCAAATTATATGCTGNCCAACCTACTGGTG
AACTGGATCAGAATGGTCCAAGGACTGTTAAACAGAGGAAGTNTTTACATTTTGAAAAC
Sequence 555

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CTACTTAGGGCGAATTGNANCTCCCCGCGGGGGCGGCCGCTAAAGGAATAATCTGCAGAA
CATCTTGATTTACAAGGGACAAAATGATGCAAATTATATGCTGTCCAACCTACTGGTGAA
CTGGATCAGAATGGTCCAAGGACTGTTAAACAGAGGAAGTNTTTACATTTTGAAAACTTG
CGGACGCGTGGGTCGAAGCTTGTACACCTT
Sequence 556
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTG
TTTTGGTTTGTTTTTTGGGCTCTCAGGTTTACCACTCTCTCCCCATCTTCCCAGGTTTAG
GAGGCAGGCCTCTNCCTTTCCTACCCTCCCACCCGAAGGTGAGTCACTAGAGTGTTACAA
GCTTACTGGCAGGGAACACTACAAATTAACAAACAGTAAGTTACCAAAAGGGGATACACC
CTTATAAAAGGGTACCTN
Sequence 557
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCACGCGT
CCGCTTTCAATAGATCGCAGCGAGGGAGCTGCTCTGCTACGTCACAATCTTTCAAAAAAA
TGAACATGTAAGAAAAAGCAGTTTTCATTGTGCTAATTATTGCAGGCCTTCATGCACGTA
AACCTCAACAAAATGTGTGCCAACAATATACAAATTTCCATATAAACAAAGTCATTGATC
ACTAACAAAATATAAACATGGNTTCTTTTATATTAGATTTTTTTTTAAAAAAAAAGCTATTT
ACCAGCAAGAAAAAACAAGTACCTGCCCG
Sequence 558
ACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGC
ATTTATTAAGGCTTGTATATGTTCAAGATCCAGTGAAGACTGTCTTGGGCGTGTATAATT
GATCTTAACCACAAGGCTGAGAAGTTATGTGCAGGGCTTATGATGCTACTTCCAAAGTAT
TAAATCCTCCAGAGAAGCCTGTAGTGTGGGATGCAAACTATTTTAAGTGTGACCATGAGG
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TAGG
Sequence 559
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGGCTTCGACCCACGCGT
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TACCACGTCCTACCGATCCGCATTCTCGCAAGTGTCCTTCACTCCATTTACTCTACTGCA
TTTTTCACTGTATTTCTCATGCCAAAACTTGGGCTTCTCCACCAGTCTGCACACGTTCAT
GCTCTCAATTCTCACAGCCATCTATTTCATTCTCCACTAAACTGTTAGAGGGATTTCTGN
AGAAATTAAAGAAATTCCTATCACTCCTAAAAAAAAAAAAAAAAAAAAGTGCGGCCGCTCTAG
AACTAG
Sequence 560
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTGTACAAGCTTCGACCCACG
CGTCCGCAAGTTTTCAAAATGTAAATACTTCCTCTGTTTAACAGTCCTTGGACCATTCTG
ATCCAGTTCACCAGTAGGTTGGACAGCATATAATTTGCATCATTTTGTCCCTTGTAAATC
AAGATGTTCTGCAGATTATTCCTTTAA
Sequence 561
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAGCTTTATTTATTTCTT
TTAGGAATTGCAGGTTCCTAACAAAGTAGGGGTGAGGGGGGTGTTACAAACCAGTCACTA
GGCAGGAACATTAGACTCCAAAAGCAGAGAAATGCTTAATTTTTCTTCTACCTGTTTCAC
CACATTCATGTANAACTGTAGTAAAAAAGATGGNGAATCAGGCTGAATCAATCTAAATAA
CAACTTAAGGCTCCCAAATCACATGAACCTAGGACCACTAAATCCAATGTCAGACGTGTT
TAAATGGNGCACTGCTCTACATTTTTCTATTATGCAAAGAGCTAGAAAATAATGGTAGTG
TCATTATGACATTCCATGAAAATGAAGAAAATCTTTCANGAAAAATTTAGAAAATAAAAA
TGTTTACT
Sequence 562
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TAGATTGTTACTTATGTTTCTAAATCTGNGGAAGCACATTTCCTTTTCTTCTTCTTTTCT
TTTACTGNTAATATCCTTATTCTCTATTTTACCAGTGGAGAATGTTTAGTATTAATTTCC
ATTTAGCTCAAGATTCAAGAAATGCAAAGTGCTATTTTTATCAAATTTCTGAAAGCCTAC

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TGTCTTCTGCTTTGGAAGTCCCACAACAGCTCTTTAATTTCCTTAAGCCCCACTTTCCTC
ATCAGCAAGTTGGTGTGGCAATGGATCATAATAGGTTGCTGGGAGGATGAAGTGAGCGGA
CGCGTGGGTCGAAGCTTGTACCT
Sequence 563
CTACTATAGGGCGAATNGGAGCTCCCCGCGGTGGCGGCCGAGGTACCCAGTAATCACATA
AATTCTGCAATCATCTGTTTATTTAGCTTAACTGTTTTTTTTTTTTTATTTGTTGAAGTTGT
TGTTGTTATTNCAGTCTTTTTCTTATTGGGTTGACCAGACTTGGTAAAATCTGTAAGAAA
GTTCCATAAT
Sequence 564
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTGTTCTTCAGATTCAAAT
GCCAACACTAATTTGAACTTCTTTGGGTCTATGACAGTTTGCAAGCCATACAAACCCAAA
GAGCTAATCTGTGATTTCTTAACTTGAGAAAATAATAATNATAACCACCACTGGAACCTA
CATAGGTTTGTNGNTTATTTAACATGACTTAACCTTTTGTTTGTATTTTTTTGAAAAAAA
AAAAAAAAAAGTGACCTGCCCGGGGCGGCCGGACGGCCGGGCAGGTCGCNCTCAAATTNT
TNAATTTNTTTTGGAAAGACANGNATTTTTTATTTTTGCCAANGCTAAAACTTNACNCTG
GGCCTTTAAAGGGGATTCCNTNCTGGCCTTTGGGCCNCCAAAAAGTGCTTGGGATTNTTN
GGGTNNAAACCCCGGNGGGGCCCTAGCCTACCAGTTTTTTTAAA
Sequence 565
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GTGCAAATTTGACTTTGTAAATGGCCCTTGGGCTCTGGGAGGAAAGCAACTGTTGGGCCA
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TACTGTTGCTACTATTTTTTAGCTATCCTGATAGATGTGTAGTGATATTTTATTCTGGTT
TTGAAGCAGTGTCATTGTCTGGGGTAAATCCTTGAGGTTTGTTGTCTCAGTCAAGGGGAA
TCAAGGGACATGGACACACAAGTAGTGAATTTAAGAGTGGAAGTTTAATAGGTGA
Sequence 566
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTCAAGCTTCGAC
CCACGCGTCCGTCTTATTTTTTACTCTTAGGCAATGCGGAATATCAATCCCAGCACAGCA
AATTCTCCAAAATGTCAGGTAGGCTCTTATCTGATGTTTTAGCACTGGAAAAAAAAAAAA
AAAAAAGT
Sequence 567
ACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGGCAGGTCAAGCTTCGAC
CCACGCGTCCGCATATTTTCATTACTTGACAATGTGGGATGGGTGCAATTTATTCCATCT
TCACTAAAATAGAAGCAATTCCATAGGTACCATAAACCTATTTTAGGTACCACAAGGTGT
CTTTTTACACAGCTCATTTGAATACAGGTGTTCTGAGAAGGGGTTTCTATTTTAAAATTA
CCATATCAAAATAAATGTGCCTTATTTTTTTTATAAGNCTTGTTAAATCAGTGTCCATATT
ACTGTTTGGGGAAGG
Sequence 568
CTACTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCAGGTACAAATAAGCCCACCCCACT
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AAGCCAAGGCACCCAGACCAGTTTCCATACATAGAAAGTTACAGCTGCTTTTATACCCCC
TTGCCCCGCCAACGTAGTTAAGAGAACAGCAGCATAAGCGGCTGGCAGAGGCAAGGAAAG
ACCAGTNNAGAGAAAAAAAGGCCATCTATACCAATTCTAAG
Sequence 569
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACGAGCGGCCGNC
CGGGCAGGTACACAAACCAGATGTATGCANTGATGCCAAAAGTCATCTNAAAATTCCAAG
CTGACCTAGTGCAACACATTTACACTTGGATAAACTATCACCTTGAAGATTTACTTTGTA
TACTTCAAAAGATCTGGTCATGAAATTTTTTAGCTAATACATAAAGNGCCGAATTGAAATC
CAGAATACAATAGCTNTGAAGGGCCGCTAGAGTGCAGATAACCAACCCATTCTACCTAAC

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TCAGGTTGAGATTGCTTTAGAACCTATCATTGGGCTTTAAAATGGTCCACAAAAAAACAC
CTCATGGGCACACTTAAAATAGTTTGCATCCCACACTACAGGCTTCTCTGGAGGGATTTA
ATACTTTGGG
Sequence 570
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTTATTTTCCCTCAGTAAC
ATGTAATTGCTACATTTTTTATAAGAAGGTATGGTTAGAAAAAAATGTGAAAGATCACTT
AAACCAAAGCCAGTTACAAGGAGTAATCTCTCCTGTTGGTTTACCTTCACCTCANAACTA
CAAGAATATTACAATACATAGTGAATAGTTGTCTGTAACATTTCTACCAGTTGTTTCANT
AGCATATTGGTCTTGGCATTTCTTGGCACTGTGGTTCTGCTGTATTATTTGTGATGTCTT
ATTGTTTGTGAGCTTTTGTTTTTTTTTAAAGAAAAAACAAAAACTAAGTG
Sequence 571
TAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCCAGTAATCACATA
AATTCTGCAATCATCTGTTTATTTAGCTTAACTGNTTTTTTTTTATTTGNTGAAGTTGTTG
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NTCCATAATTATGGGGAAGATTTCCTCTGAATTGGCTAAATTCCTGTAGCTGAAAAAAAA
AAAAAAAAAAAAGT
Sequence 572
TTAGGGCNATTGGAGCTCCCCGCGGTGGCGGCCGAGGTGTACAAGCTTCGACCCACGCGT
CCGCAAGTTTTCAAAATGTAAATACTTCCTCTGTTTAACAGTCCTTGGACCATTCTGATC
CAGTTCACCAGTAGGTTGGACAGCATATAATTTGCATCATTTTGTCCCTTGTAAATCAAG
ATGTTCTGCAGATTATTCCTTTAA
Sequence 573
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTACGGC
TTCTGACAGGCCTCAGAAGAACATTCCCTACCCCAAAATTATAAAAATAATCTTGTATAT
ATTCTTCTCAAAACTTTATACTTTTTTTTAAGGCTTGGATTTTTAATCTATCTGGAATGTA
TTTTTAAATACTGAGTGAGTCACTTTTCTCCCGGACGCGTGGGTCGAAGACCT
Sequence 574
GAATTGGAGCTCCCCGNGGTGGGGCCGCTCGAGGCCGCTCTGACCTCTTTAAGGNANACT
TATTATGCTAATAGTTGATGCGCCCTTTTGCTGNANCAGTTACCATAGGTTACATGATAA
NTATATATTGTTGNGATGATCTGATTNCCTGNNTNCCCCACCCNTGCAAAACAACAACAA
AAACCTTTACCAGGCTNTATAACANGGGGACCAAACTTGNTTTTGCTCATCATTGCCGGA
CG
Sequence 575
AGGTACTTACCCCAGACAACGACGCCGCTTCACCATGATGATGGACAACAGGCAACTTTT
TTTTTGGAGTTTCAGCTTGCTTCCAACAGGGACGGTGAGTGTGAGGTTTATTCCCATTTC
TAAGACGATAGAAGTTTTCAGCCTAAGCCGTATTCCTAGGTAAGCAGCTGGATTGCAAGT
TTTGTCTTGGAAATTCTCCTTAATGACTAAAAGTTAAAGAATTAAACAACCTAGCTGGGC
TTAAATTTCTTNCTTACCCATTAGAAGTACCCTTGCCC
Sequence 576
TAGGGCNATTGGAGCTCCCCGCGGTGGCGGCCGNGGTCTAAGAGACAGGGTCTCACTACA
TTGCCTAGATTGGNCTCACACTCCTGGGCTCAAGCAATCTTCCTCTCTTGGCCTCCCAAA
GTGTTGGGATTGCAGGTGTGCGCCACTAGGCCCAGCTTGAAAAATTTTTAATGCATGTGG
TAATCCACAGGAGATCACATTTAGTATATGACCAAGTTAATTAAGAAGNCAAAAAACACG
TTAAATTTAAGCAGAATAAGGCTGGGTTCGGTGGCTCATGTTAGTTTTTATCCTTAAAAT
TGTCTGAGTTCTTAGAACACAGAAAAAACAAATTTGAATGCATTTCTAACAGCTTAATAA
TTTATATGTCCCATTATG
Sequence 577
GGGGNGGCGGCCGCCCGGGCAGGTCAATGCTTCGACCCACGCGTCCGATTTCAGGTTGAC
TTTTCTCACCTTTAACCTCTTTATATAGCACAGTGCAATCTGGCCCTACTGCCACTTCAT
CTGGGTTATCTGTAGCTTGAGTTGTAAAAAAAAAAAAAAAAAAAAAGTGCGGCCGACCT
Sequence 578

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AGGTGTCGACTCAAGCTTTCAGATATAGGCATTCCAGAATCTTCTCTTTACGAGTTCACC
TGCTAGTATAATCTCCACAACTTGAATGGCATTGGTTGTTCTGTAATTCCTGCCAAAAGC
ATCACAAGTTGTACCTGCCCG
Sequence 579
CCGGGCAGGTTACAAGTCGACCCACGCGTCCGCTTCAGAATATCCAATTCATGTGAACTA
CAGGAAATTATAGTTTAGATATTTTTAAATGATTTGCCTGTCACCGTATAACACAAGGGT
GTCATGACCAAGCTAGATCTCTTTACCATATCATTAATAAAAGTCAAATTTTAAATTTGT
GCCCAATTTGGCTGGGTGTGGTGGCTCATTCCTGTGATTCCAGCACTTTGGGAGACCT
Sequence 580
GTGAACCTGCCCGGGCGGCCGGCCGCACTTTTTTTTTTTTTTTTTTTTTCCTTTTGAGACA
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CAGCCTCCCAAAGTGCTGGGGTTACAGCCGTGTGCCACTGTGTCTGGCCCTTTTCTTTTT
CATAGGAGAAGGGTTGTTGACTCCCAGGAAACGTCACCTGGAACCAAGAATGTGAACTCA
AGGACCCCCGCCTGTTGGCAGCTGCATTTACTTGACTCCTGTTCACTGTTTCTTAGCCTT
GTCCTTTCTCTCCTGCCAGTTCTAGGGGACACTGCTTCTCCTGGTTGACCTC
Sequence 581
CCGGGCAGGTACCCTAAAAACTTAAAGTATAATAAAAAAAAAGATTATTTCCTATACTTCAA
AATCAACAAGATTTGATTGCATTTAAATTTTTCTGTCCATTTGTTCTTCTATGTAATACT
TTAAAAATAATTGGCATAAAAATTCAATCAATTCATAAAAGTCCAAAGCAAAAAAAACAA
ATCTACTGACATCTCTTGAGGAAGAAATGATCAGGATTGACATTAATGAACCCTCTCACA
GAGACCACTACACACACACACACAAAAAGAAGGATGGGTGAATGGATGCAGAGAGAATTT
AATAAGACTGAAATGATGCCATACATGCTTTTAAAAAATAAAAAGTATTAAATTTTAA
Sequence 582
CCGGGCAGGTACTTATACTAGAAGATGCTCCAAGGTTTCAGAAAGGAATTAATTACTTTC
AATTTGCACAATTTAGAACAAATATCTGGCTTTTCCCTAAGCTTAATGATTTTCCATTTC
ACACAACTAAAATATAATAGCATTATTTTATAATCAAGTTTAACTGATGGTCTATGATAG
TAGAGCGATTTAGTATTTTGACAAAAATCTTATGAGACATGAAGTCATTCAATTTGCCGG
ACGCGTGGGTCGACTCAAGCTAGACCT
Sequence 583
AGGTCGCCATCACACCCGGCTAATTTTTTTTGTATTTTTAGTAGAGACAGGGTTTCACCA
TGCTAGCCAGGATGGTCTCAATCTCCTGATCTCGTGATCCGCCCACCTCAGCCTTCCAAA
GTGCTGGGATTAAAGGCGTGAGCCACCACGCCTGGCCAGGAGATTCTTAATTATTTCTGA
ACTCTATCAGTTTTGTATTAGGACATCTTATTTAATATTATCAAAAGATAGTTCCTCTTA
GAGGCATAAATCAGTCAATCAACAAACAATAGGCAATCACGGACGCGTGGGTCGAAGACC
TGCCCG
Sequence 584
AGGTGTACAAGCTTCGACCCACGCGTCCGCATTTTTCTGGTGTTCCCTCTTACGTGCACA
CCCCTTGCTCCCCTTTGGGTTGACTTATAATCTGACTTTTGTGACAGATGTTAGGAGGTG
GAGCAAAGGAATTTCAGACCAATCAGTTAAGAGACTGCTGTGGGGTAAGAAAAAAAATTA
GCCTCTTAAAATTACTCTTATCAAAGGAAAAAAAGTTGGAAGCACATGATAGTATAACCA
GAAACATGACACAGAAGAATTAAGGGAAGAACCTGCCCG
Sequence 585
CCGGGCAGGTGGAAAGGTGGGTGGGGAGAGGGAGGCTTATTTGTTGCTGCAGTGTAACTA
AGTGAAACCTAATTCATATGACTCAAACTAAGGTATATTTGGTTAGATCTAGGTGAGTTC
TACTTTAGAGGAAATCCTGGTAACTGTTGTTTGTTTGTAAGTTATAGCTGTAATTAATTT
TCCCTGTATTCAAAGCCCCCAAACCCTGCATTCAGATACTATGCATTTAGACTTCCTTAG
GCAAAGTCAAGGCAACAAGCTGATGATTCTAAGCTATTATTCAAGGAGTATCTACCATCA
TAAAGGTGGTTTAGTCATATAGATAATATCAATCAATAAT
Sequence 586
CCGGGCAGGTCTTCGACCCACGCGTCCGTGATTGCCTATTGTTTGTTGATTGACTGATTT
ATGCCTCTAAGAGGAACTATCTTTTGATAATATTAAATAAGATGTCCTAATACAAAACTG

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ATAGAGTTCAGAAATAATTAAGAATCTCCTGGCCAGGCGTGGTGGCTCACGCCTTTAATC
CCAGCACTTTGGAAGGCTGAGGTGGGCGGATCACGAGATCAGGAGATTGAGACCATCCTG
GCTAGCATGGTGAAACCCTGTCTCTACTAAAAATACAAAAAAAATTAGCCGGGTGTGATG
GCGACCT
Sequence 587
AGGTACATTGTTAGACAAGTGTTTATCACTAATCTGGAATACATCATCTTCAATAAGGCT
CTTGTTTTCCTCCAAGCTGCACTGCTCACACTGCTCAGTTTTCTGTTAAGCAACCTGCTC
ATTATAGTAGAGCACCAAGGTGATCTGTTCTTCTGTTCTTCAGAAGTTCACTATTTCTTG
TTGCAACAGGGCTACATGATTTTAAGATTCCTCAAAGTCAATACGAATTAACATTATTTT
CCATTTCCATTCTGTATATCTTCACATTCCATAAATATAATACTCATGTATACGTTAAAT
TTCCTTATAAGTTCAACACATTGAAAGCTAAAATAAAGACTTCCTACTAG
Sequence 588
CCGGGCAGGTACACAAACCAGATGTATGCAATGATGCCAAAAGTCATCTCAAAATTCCAA
GCTGACCTAGTGCAACACATTTACACTTGGATAAACTATCACCTTGAAGATTTACTTTGT
ATACTTCAAAAGATCTGGTCATGAAATTTTTAGCTAATACATAAAGTGCCGAATTGAAAT
CCAGAATACAATAGCTATGAAGGGCCGCTAGAGTGCAGATAACCAACCCATTCTACCTAA
CTCAGGTTGAGATTGCTTTAGAACCTATCATTGGCTTTAAAATGGTCCACAAAAAAACAC
CTCATGGTCACACTTAAAATAGTTTGCATCCCACACTA
Sequence 589
CCGGGCAGGTGACTTGGCTGTGAAAAGTGCTAAAACAGATAAAAGACTATACTGACAGGC
AAATGGAGCCTGTTATGACACTGACATTGAAGGTGAAAGGAGAATCCAGTTCACATTAGC
CAGGGTCTCAGGGACCAGGTTTTGAGGCAGTATTTCTGCCTCTTGAGGACAGGGCAGAGC
AGGTGGGTAAAAAGCAAAGAGACCAGGGAAGGGGGACTAAAAGTAAGGGAAACAGCATCT
GAGGAAAGGCTCCTCTGACTGGATTTTCACAAACATTATTTATTAACCTCACTAAACAAG
GATAATGGGACAAAACAGGGGCAAGCTGGAAAACCAGCAGGGGTATTTGGCAG
Sequence 590
CCGGGCAGGTACATCACCCTGCTGAGGGACATCCAGGACAAGGTCACCACACTCTACAAA
GGCAGTCAACTACATGACACATTCCGCTTCTGCCTGGTCACCAACTTGACGATGGACTCC
GTGTTGGTCACTGNCAAGGCATTGTTCTCCTCCAATTTGGACCCCAGCCTGTTGGAGCAA
GTCTTTCTAGATAAGACCCTGAATGCCTCATTCCATTGGCTGGGCTCCACCTACCAGTTG
GTGGACATCCATGTGACAGAAATGGAGTCATCAGTTTATCAACCAACAAGCAGCTCCAGC
ACCCAGCACTTCTACCTGAATTTCACCATCACCAACCTACCATATTCCCAGGAC
Sequence 591
CCGGGCAGGTGGAAAGGTGGGTGGGGAGAGGGAGGCTTATTTGTTGCTGCAGTGTAACTA
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TACTTTAGAGGAAATCCTGGTAACTGTTGTTTGTTTGTAAGTTATAGCTGTAATTAATTT
TCCCTGTATTCAAAGCCCCCAAACCCTGCATTCAGATACTATGCATTTAGACTTCCTTAG
GCAAAGTCAAGGCAACAAGCTGATGATTCTAAGCTATTATTCAAGGAGTATCTACCATCA
TAAAGGTGGTTTAG
Sequence 592
AGGTCAAGCTTCGACCCACGCGTCCGCAGCCTGGGTGATAGTGAGATCCTGTCTTAAAAT
GAAGAAAGAAAGAAAAAAAGAATGAGAAGGAAGGATATTAATTGAAGTAAGAGCACATTT
GATTACAAAATAGAAGAGGAGTAAGTGAGAACTAAACGGGGAATACAGATAGCAGAGATT
AAATAGGCTATAAGAAAAAAAGGGATGATAATAAGACCATGGTAGTACCTGCCCG
Sequence 593
AGGGCCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGTTTA
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TGCATGGAACACATATACCAAACATCTTTCTGATAACATTAAACATTTTTAAAAGATGTT
AAATGTTCTTTTTCATTGNGGTGCTTCAGATTCCTGATTCTAGAACTTGTGTGTGTGGAAC
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TAAATGATGGGGGAAGGAACTAACATTTTTGCAGNCCCTGGAAATGTAAAATGTTGTACC

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Sequence 594
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAATAAATAGC
ATTCCCACGGTGACCACAAGTCTTGGAATCAGTTCCAGGTGTCGTCGTGGCCGTTGACAC
CGCTGCCTTCTGACGGTAAATGTATTGTAGAATTCATGTTGTTATCAGGCTTCAGTTTCC
TCATCTCTAAAATGAGAGGATTGGATAAGTTAGTAGTTTCTAATTTTTACTTTTAATCAG
TGGCATCTCCCATTTATTTTTCATTTGAAATAAAACTTTTGAATTTTATCTTCTACCTAA
ATAACATATTTTGTTTTATGTTTCAAGATGAAGCTCACACTGAGTTGGAAAAAAGGAAAA
AGCAAAGGATCAAAGCTG
Sequence 595
CTATAGGGCCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTGCCAAAGCCTT
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TTCTTTTACTGTTAATATCCTTATTCTCTATTTTACCAGTGGAGAATGTTTAGTATTAAT
TTCCATTTAGCTCAAGATTCAAGAAATGCANAGTGCTATTTTTATCAAATTTCTGAAAGC
CTACTGTCTTCTGCTTTGGAAGTCCCACAACAGCTCTTTAATTTCCTTAAGCCCCACTTT
CCTCATCAGCAAGTTGGTGTGGCANTGGATCATANTAGGTTGCTGGGAGGATGAAGTGA
Sequence 596
ATGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTCCGA
TTATTCTCTCCATTTAGGCTATAAATCTTTCAGTGTAGGGTGTTTCTAATGTCATATTCT
TCCAAAAAAAAAAAAAAAAAAAAGT
Sequence 597
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AGTTAACCATTACATAACCTGCAGGTGGCTTCTCCCCATACCTGCCGTGGGATAATATGG
CTCACTTTTTACTTCATTTACAATATTTAATAAGTGCGATTTTAGACTTGAGAAGAGAAT
ATTTTCTGCTAAAATTATCCCCACTAGAGATAATCACCAGTGAATTAATACACTGCAGCA
ACGGAACCAGTCAGCTTTTTTGGTAATCATTCCCTTCCT
Sequence 598
CCGGGCAGGTCTTCNACCCACGCGTCCGGCTCTCCAGTTTATACATGAAGAAACTTTCCG
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AGTTAACCATTACATAACCTGCAGGTGGCTTCTCCCCATACCTGCCGTAGGGATAATATG
GCTCACTTTTTACTNCATTTACAATATTCAATAAAGTGCGATTTTAGACTTGAGANGAGA
ATATTTTCTNCTNAAATTTATCCCCNCTAGAGATAATNNACCAGTGAATTNATACACTGC
ACCNNACGGAAACCAGTCA
Sequence 599
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AAGGCTTGCCTTTTTTCCGTCGCTCTG
Sequence 600
AGGTCAAGCTTCGACCCACGCGTCCGTGATGCTGGCTTCCCGGTCAAAGCTGAGGAGTTT
TGTGGTGCTTTCTCAGGAACCTTCTGTCACGGAAACCATTGCACCCAAAATTGCAAGACC
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GAAGTCCNCACAGGAGGGGGTGCTTGGGACCACACACTGATGCTCTTGNCATTCAGACTC
TGAGAAACATGCCGCGTGATGAANAAACCATCCCAATTANANGAAGCTAGCTGNNTTNCA
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Sequence 601
CCGGGCAGGTCAAGCTTCGACCCACGCGTCCGTGATAACTTCTCCTAAGTGCCAGGCATT
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TGATTGAGAGAAAAAGAACCCTCCAGGAGCCCTCAGCGTAGTAGGGGGTTGGTGTTGGAG
GGTGGAGGAATGGAAAAGGNCCTGAAATGCANGCAGAGAAATGATGAAACAATTCCNGGG
GCTGCGGNGAGGTTANATGAATATCTTTACAGCAGCCTNGAAGACTGATCANGTTACTAT

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ACCCTCTCTTCTGTCCACGTGCATTTNA
Sequence 602
CCGCGGTGGCGGCCGAGGTCTTCGACCCACGCGTCCGCATTTATTAAGGCTTGTATATGT
TCAAGATCCAGTGAAGACTGTCTTGGGCGTGTATAATTGATCTTAACCACAAGGCTGAGA
AGTTATGTGCAGGGCTTATGATGCTACTTCCAAAGTATTAAATCCTCCAGAGAAGCCTGT
AGTGTGGGATGCAAACTATTTTAAGTGTGACCATGAGGTGTTTTTTTGTGGACCATTTTA
AAGCCAATGATAGGTTCTAAAGCAATCTCAACCTGAGTTAGGTAGAATGGGTTGGTTATC
TGCACTCTAGCGGCCCTTCATAGCTATTGTATTCTGGATTTCAATTCGGCACTTTATGTA
T
Sequence 603
ATTGGAGCCTCCCCGCGGTGGCGGCCGAGGTAGCTTGAGTCGACCCACGCGTCCGTTCAG
ATCCGTTTCAGAAACGTGAGTCTCTAGCTCAGGAGATTTCCACAACTGTCCTTAGTAACC
TGATCTTATTCTCATGTTTAACCTTGGCAGTGGGAAGTTCTTCCTGGTATCCTGCCTAAT
TTACTGGAGTTGGCATTAATGCCATTTCCCCCTAAGGCGTGGCTCTTGGACCAGTATCAC
CTGAGAATTTGATAGACATAGACCCAGAGTTACTGAGGGCAGGTGCTCTGTTTTGGGGAC
CAGCAATCGGTGCTTTAGCAAGTNCTTTGGGTGATAGGGGTTNTGGAAACTACTGCTCTA
AAGCATNATCTGTTTTTGAC
Sequence 604
GGTACCCAAAAGATATCACTGTGAAGGTTTGGATACACTGACTGAGGAAAAAAGAAGGTC
CTGAAAGCGTNTAGACAAAAAAAGACTACTTGTAAGTTGCAAGAATCAGAATGGCATTGG
ACTTCTCAGCTTTCCTCATTAGAAGTTTAAGATCTGAAGCAATCTTTAAACTCGTGAGGA
AAATTAAGTCTAATAAATANTTTTCTTCTTAGCCCAAACAATCAAATGTGAAGCTAGAAT
AAGCATTTTCAGGTAAAAAAAAAAAAAAAAAAAGTGCGGC
Sequence 605
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Sequence 606
AGGTCTTCGACCCACGCGTCCGCAACTGTTGATCTAACTTTTCCACTTGAATGTCTAATT
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GTCTCCCACAGCCTTCCCTATTTCTCTACCTGGTACCTGCCCGGGCGGCCGCTCGACCTG
CCCG
Sequence 607
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GTTTGCCTTATCCTATATCATTTGAATTTTCAAAAAATAAGCTCATTATACAATCTTTAA
AATATTTTGAATAGAACTGTTTCATGTGTTATTTGT
Sequence 608
AGGTCAAGCTTCGACCCACGCGTCCGGGGAACCCTTGTTCAGGTTCTTTTTAGGCAACCC
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Sequence 609
AGGTCAAGCTTCGACCCACGCGTCCGTGATGCTGGCTTCCCGGTCAAAGCTGAGGAGTTT
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AGTCCGCACAGGAGGGGGTGCTGGGACCACACACTGATGCTCTGTCATCAGACTCTGAGA
ACATGCCGTGTGATGAAGAACCATCCCAATTAGAGGAGCTAGCTGACTTCATGGAGCAGC
TTACACCAATTGAA
Sequence 610
ACTTTTTTTTTTTTTTTTTAGCTTGAGTCGACCCACGCGTCCGGGGATCTAGATCACGAGCG
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Sequence 611
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Sequence 612
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Sequence 613
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Sequence 614
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Sequence 615
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TCAAGAGATTGAGACTACCCTGGCCAACACTGTAAAACCCCGTNTCTACTAAAATACAAA
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Sequence 616
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Sequence 617
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.Sequence 620
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Sequence 622
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Sequence 623
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GGACACAGCGGTACCTGCCCGG
Sequence 624
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CACTTGAAGCATNAGCACACACTTAAAAAGGAAA
Sequence 625
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TCTTCCAGCATGGTTTTCTCACCTGATACTGTAACCATACTTCCATATCCTCAAATGTGT
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Sequence 626
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CCG
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CTTTGTATGTACCTGCCCG
Sequence 629

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ATGATCCTTTCCCTTGGGTGGACAAGTGTGATTTGGTTGTAAGGCCATTTTTCAAGTTGC
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Sequence 630
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Sequence 631
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Sequence 632
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Sequence 634
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Sequence 635
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Sequence 636
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Sequence 637
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Sequence 640
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Sequence 641
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Sequence 642
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Sequence 643
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Sequence 645
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Sequence 646
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AGTGGGCATTTTCCTTTTCTACATCAACAGGCAGCACAAATACCTCTGGTGAGAAGGAAT
TCNAAGAAATGGTTNTTCTACTGACTTGAACAGCACCTTCATCAGCAGCAGATGTCAGAT
GGGAAGGC

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Sequence 648
CCGGGCAGGTACCACTAGATTGCCTCCCTGTGCCTGGGCAATTTCAGAAAATGGTGGTTT
TCCTTTCGTTTCCATCTTTTTTAAGACTTAAAAAGTATCTGCTCTCATTTTCTCCTAGCG
GCCTCCATGCCTTGACTCAAAAAATGCTGTCTTAGTTGACAGCCTTGAAATGAGTATGAC
CCTAGCTCTAGTTGGGTGGAAATCACCTCGCATAGAAATAGACCTGGAGGGCCGGGCACG
GTGGCTCACTCCTATAATCCCAGCACTTTGGGAGGCCCAGGTGGGTGGATCCCGAGGTCA
GGAGTTCAAGACCAGCCTGGCCAACATGGTGAAACCCCGTCTCTACTAAAAAAAAAAAAA
AAA
Sequence 649
AGGTACTAGTATGAAGGAAATAATATCCACACACTGATACTGGTCCAGCNGAAACCAAGA
CCGCTCCTGGTGCATTAACTTTTAACAGAGCANGGACTCANTTCTCTGAAAATAGTGCCA
TAAAACATGTGCTCCCAGAAGAATAAATATTTGGCTTGCTAGAATTTCTGCNGCTTTTNT
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CTTGGAAANAGTANNGGACCNNGGCTTATCTCNTCATTTTCATTCTGCACACTNCAANTC
ANTCNTTTTCCCATCTTNNTTCCCNTCTCTGNAATTTATCACCCTCCCCCTCT
Sequence 650
GGCGATGGACTCCACCGCGGTGGCGGCCGAGGTACTTACCACAGAGAAAAGCCAATAATC
ACAATATATGTTGTCTTACTGACCCATAACCCATTTTCTGAGGGTGGCAGGCATTGTGCC
CCCACTGTGAGGTGGGACTATATACATATACAAAGGAGGTGTTTAACTGGGTGGCATGTC
TCAGGGAGATGTAANGACTTACCTGCATATCCTGGCAGTNTTGAAATGATAGTGAACTGT
TCNTANGGCNTCCNCTTGATGGCATAGNCAAACACCAGNATTTTCTTGGNAGAATGATT
CGGNAAATGCTACATAGAAGAAATGGNTGGTGAGCTNTTACTGTGACTGTGCCCATAGTA
AGTCATCCTGGACCCTCTGAATCTTATCCCAC
Sequence 651
GCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTGTTTTTTTTTTTTTTTTTTTT
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GCAGATGATTTGGGTTCTAGAAAGAAATTGTGCCAGGCATGGNGGGCTCATGCCTGTAATC
CCAGCACTTTGGGAGGCTGAGGNGGGAGAAACCTGTNAGCTCAGGAATTGGAGACCAACC
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CAGGAGTTCGAGACCAGCCTGGCCAACGTGGGGAAACCCTGCCTNTACTAAAAACACAAA
AATTATCTTTGCTTTGNTGGCGGGAGGCTNTAATCCAGCTTCTAGGGAGGTTGAGGCAGG
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CCAANCTGGGCAACAAGAGCCAAATTTTNTTNAAAAAAAAAAAAAAAAAGGGCCGGCCTTGG
GGGTNNTCCCNGGAACCCCACNCNTTNTGAGGCCCCACCGGTGGTNNTAGGGNCNGAGTT
CAAAACNNCCTTCCACTTTTNGAACCCGTTTTTTAAATTCCAAAAATTNCTGGCTGGATA
AATCCGNAGCCCCTTCTTGNGGGTGNGGNNGGANTNTTTCCCNCAANNGGGGGTGGGTNA
NNNCCGAAANCCCTTATTTCCCCTNTGNAAAGGGNCTTTTCNAAAAAAAAAAAAANA
Sequence 652
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AACAATTCCAGGGCCCTGGTTTCTGGGATGACAGGCTTCCCAACACTCATGCCAGGACTA
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AATGTGTGTTTGTTGCCCAGATTATTCCANAAAGAGTTGAAGGGAGGAAAGGNGTGCNTG
GGGTGCNTGGGANTTTTANCCCTCTNTCCACCCNGATTTCTAAGTTGGGGGGGGGCATCCA
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ANGGANGGGTGAAGNTTAGGAGGGCAAAGGTTAGCCTGGAGGCTGCAATTAACAAGAATC
AAANTGGGGTTTAAGGATTCTCACACCCAGTTTGCTAATTTCAGCTGGTCCTTGTAGAGG
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NATCTTTCATCTTTTTCTGNGTGGCTGGTTTTCTGCCANCCTTACTTGGACAAGCACCAT
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ATTTTTTTNNGNCCAAAAATTNGGCAAAAAAAAA
Sequence 653
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CCCGGCCTCTCATAATTTTCTTAAATT
Sequence 654
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CTNNCTGGNNNGGAGTGACTGGAGGCTGTCCCCACGTCCCACTTCAGTGAGGCATTCATG
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CTAGTG
Sequence 655
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NCTGAACATACTGTCTTTCTTTCCCCAGTTCCATGTCACAGCACCTGCCTAATAATAGGT
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AATTCCNANAACCCATTNGAGAGGCAATACATGTTAAGGGACCTNTAAGATGTTTCACAA
CCTTGGAAATAATTAAAAAGAACTTTCTACTGNTTTACTTATTTCCCACTCCTGGCTGCC
CCTCTTGGGTGGACTGCCTNCTGTTGGAGGGAATACTGNGTGAGACACATCTTTTAGTAA
AACAGAAATGTGAAACCAACTTGCAGAAATCACAAGCACACTGTTACCAAATAGGTCTTG
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TATTTCTTTTTAAGACTTGATATTTAAGAATACTGGTTCTTTTTTGGCCAGCATCGCAAN
GAAGTTTTTCTTTAACTTTTGGGCCAAAAAAAAAAAAAAAA
Sequence 656
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TTGGATTTCATGATTTGCATAACTCGGCATAGTGTAAGTGCTTGTAGTTTTAAACAGAAA
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CCCTGGGGTTCAAGGNGATCCTAAGAACTTGNGGGCCTCAAGCAGTCCTCCTGCCTCAGC
CTGCCAAAGTGCTGGGGATTACAAAGCATGAGCCACTGCTCCTAATTCTTAAGAGATA
Sequence 657
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CGGTGAAGCCCCGTCTCTACTGAAAATGGAAAAAATTGGCCGGACCGTGGTGGCGGGCGC
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CCTNGGCCTTCCAAAGTGTTGGGATTACCGGTGTGAGACACTGGCCCCTGGCTATATTTT
ACTATTTGGAAATCACAATGCATCTTAAAATTGATGGCTTCTTGCAACCACTTTCAACCA
GGTGCCTGTCATGATTTAAGTGCTAGCATCAAGGCAGGTTAGTTATGAAGAAATAGAGTG
TGTGTTTATATACTCACACAGTTAGAAATCGACCCTTTTAAAAATTATTTCTTTTTGAAA
A
Sequence 658
AGCTCCCCGCGGTGGCGGCCCGCCCGGGCNGGTACCGCGGGATATGAAGTGAGGTTAAGT
CAGATGGAATGGCAGTGGACTACTGTTTTTGGTTAATAAATCGAGATACCCTTAAGAGTT
GTGTTCTGAACATACTGTCTTTCTTTCCCCAGTTCCATGTCACAGCACCTGCCTAATAAT
AGGTGCTCGAAAAACATCTGTTGAATGAAATGAATTCTTTTGTTTGCAGTAGGGCAAAGA
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CAAGAAAANTTCNAAAACCCATTNGAAAAGCATACATGTTTAGTGGAACCTTGAAAATGT
TTTCACAACCTTGGGAAATAATTTAAAAGTAACTTCTACTGGTTTTACTTATTTCCCACT
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CACATCTTTTAGTAAAACAGAAATGTGAAACCNACTTTGCAGAAATCACAAGCACACTGT
TNCCAATTAGCTTGACTGGCTTCCTTNCTGGGGGGACAAATGTTTNGATAATGTCTGTCA
GTAGATTCAGTTCCCCTATTTCTTTTTAAGACTGATATTTAANAATACTGTTTCTTTTTT
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Sequence 659
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TGAACCCGGAANGGAAANCTTTGCCNTGGGGCCCANATTTNNNCCCNTTNNNCTTCANCT
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Sequence 660
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AGAAGTGCAGGAACAGCCCAGGCCTTTGCAGCCTTCCCACACCCCCTACAAGACCTGCC
Sequence 661
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TCTTCCCTTTGTCGGACCAAAGAAGTAAACACTGTGTGGAGAGGGACTGACGTGTTTGGA
GGGAAATGGGAATGTACCT
Sequence 662
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Sequence 663
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TTNAAAAAAAAAAAA
Sequence 664
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CCAGTTCTGTCAGCATTCCAAGTCAGGTAAGACAGAAAGCCATCTCTTAGGCAGTCCCCA
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GTTCTCAGGTGCTGCAGTTAGCTGCT
Sequence 665
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CATCCTAAGGAACATTCCCAGGAAAATTCCAGCCTAGAACCTCCTGGGGTCTGACAACCT
TAGAGAACAGTGCTGGCTTTGAATGGGCTTGGGGGCAGCCTCGAAACCCTCTTTCCAGTC
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TCATTTCCAACCCCGCCTGTTCATCTGATTCATCTGTACCTCGGC
Sequence 666
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTCAGACATTCCCCCAGTGGCT
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GCTTTAACTCACNGGATAGTTCTTATCACTTTTGGTGGTGGCACAGGNATATGATAATTA
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ATTAATTTCATTA
Sequence 667
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Sequence 668
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ACTGCTCTGTCAGTGCCATGAGTGGGGAAAACAGGAGCTTGCTGCACTGGTAGAGACCAC
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Sequence 669
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GCCAAGCAAGAGGAAATGATAGGATTAAAAGTAAAATCTTGTGTTTAGATTTTTTTTTTT
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TTATGCTGTATTGGTTAAGGAATAATGACA
Sequence 670
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Sequence 671
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TAAAAATACAAAAATTCGCTGGGTGTGGTGGTGGGTG
Sequence 672
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Sequence 673
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Sequence 674
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GCATGTTAATTTGCCCTGCTTGCAGAATCTCTCTGGCTTGAAAGGAGATTATATTCATGG
CAGTCTGTGAATTTTCATTTTATTTCATTTATTTATTTGAAGACAAGAGTCTCACTCCAG
CCTGGGTGACAAGAGCAAGACTCCCGTCTCAAAT
Sequence 675
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ACCGGCAAGGGGTGCCATTCTAGCATCTGGGTGGGAGAGAGGAGGCTGAATGCCAGGGGA
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TGTTCCTGGCAGTGGAGACAACATNTTTAAAGGCATGGGAGAATATCTAAAATTTACCCT

Sequence 676
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CACGGTCTCACAGCAGCCCTGGAAAGAGGCTGCTCTCTGTTGGAGGCTAAGGGCCAGTGT
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Sequence 677
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ACCTCTGCCTCCCAGGTTCAAGCAATTCTCCTGCCTCAGCCTCCCGAGTAGCTGGGATCA
CAGGTGCCCACCACCACGCCTGCTAATTTTCATACCCGCGTACCTCGGCC
Sequence 678
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GGTCTGAAAGGATTCATTTTGACAATTTTATATCACATATTTATATTTACCTTAGGTGGT
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TNCCGCTTCGTGTGTNGTGTGTGTGTGTT
Sequence 679
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AGGGCTTCAGAGGAATGGCACATTGAAATAAAAGGGAAGTGGTAAGAACAGGAACCCAAG
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Sequence 680
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CCTCTCACCCCAAGTACCTGCCCG
Sequence 681
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TTTTCCTACA
Sequence 682
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ACTAACTCCTCTTTGTTTTTGTATTGAAGAGCCAGCTTACCCCGCCATTTNTAAACCTCA
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TNAGAANTNAGTAANCTTAAGGCTTNAAGAATCAACAGNGCCCCTTTGGGNATTAAGGGC
CATT
Sequence 683
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TGCTAATATCTGTATCTTTTACTCTATAACCTAATTTTTTACATTTTCAGAAAAAAATTTT
TACAACAATGTAAAAAATACATGGCCCGGGTGCGGTGGCTCACGCCTGTAATCCCAGCAC
TTTGGGAGGCCGAGGCGGGTGGATCACCTGAGGTAAGGAGTTAGAGACCAGCCTGGCCAA
CATGGTGAAACCCCGTCTCTACTAAAAGTATAAAAATTAGCTGGGCATGGTGGCAGGCGC
CTGTAATCCCAGCTACTTGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCAGGAGGCAAA
GGTTGCAGTGAGCCCAAGATCCGCGCCATTGCACTTCTAGCCAGGGAGAGAAGAGCCGAG
ACTTCATCTTAAAAAAAAAAAAAAAAAAAAAAAAGGTC
Sequence 684
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TAATGTGTGCCCCCTTGGGGGGTNANAGTGAGGTGGAGGGGGGATGTTAATNACCATGAGAG
GCAGAGGGTCAGNCNANTTTCCANNGCTTCNNGCTTCCTTTAAATGANGGAAAACACGTG
CANGTNTTAGGAGACAAAGGAAGGGAANTGACTGTTTCCTGGCCTGGTNTGTGGGCCCAG
TNGNCTGNTNCNTTCAGTGNCTNCGTGCANTTNGACTNTACACNTANGNNGGCAGGCATA
GGTGTNCGGTTNTGAAAGACNGNNNTCTTTNCACATTCTCTNCTGCTCTAGGGACTGAC
Sequence 685
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTAGTAGAACTCTA
GGAACTGACCAAACCCTTTTAACAACCAGGGGAGTGCTTGATGAAGGAAGAGGCTACCGA
TCTTTCATAAGTATGAATAAGCAGCATGCATAAACCAATTACCTTCCCCTATTCCTCACA
ACCACCACCACCACACCCACCACCTCTTGTGGCAGTGGGGATAGCAGCCCATGTTCCTGG
AGTTGCTAACCGGTGCCAGGAGGGACAGTAGGGATCATGT.CCTTCAAAATTTAGGGTTGT
ACCT
Sequence 686
CCGCGGTGGCATGCATCAAGGTGACAGGTGACGGCATGGTTATGGATTAACTCACCAAGG
AAATGAGTGTGGAAAGAAGAATGCANAAATCTGAGGACTAGAGCCTGGAGATGGGGAGCT
TCGAGCTCAGAGGAAGAAGAGGATCTTCATCACGGGGAGACATCAGCCTTCTGAGTATCT
GGGACTGCAGGTTATGTGCCACCACACTCGGCTAATTAAAAAAAATTTTCTTAGAGACAG
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CAGCCTTCCAATGCCTTGGGCTT
Sequence 687
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AGGAAGAAGAGGAT.CTTCATCACGGGGAGACATCAGCCCTTCTGAGTATCTGGGACTGCA
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TACCGTTGCCCAGGCTGGTCTCAAACTCCCTGGGGCTTCAAAGTGAATCCCTCCCTNGCC
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TCCTGGTCAAGCAAAAACAAGTGGGGTTTGGNGGAATAAACCAACCCTTGGGTTAAAAAT
AA
Sequence 688
NGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGGGGGCCATTGAGACTGCCATGGAAGACT
TGAAAGGTCACGTAGCTGANACTTCTGGAGAGACCATTCAAGGCTTCTGGCTCTTGACAA
AGATAGACCACTGGAACAATGAGAAGGAGAGAATTCTACTGGTCACAGACAAGACTCTCT
TGATCTGCAAATACGACTTCATCATGCTGAGTTGTGTGCAGCTGCAGCGGATTCCTCTGA
GCGCTGTCTATCGCATCTGCCTGGGCAAGTTCACCTTCCCTGG
Sequence 689

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CCGCGGTGGCGGCCGCCCGGGCAGGTACGCGGGGGGGATACTCATTAGAGTTGCTCGGTGG
AGATGGAATGATGGTGGGGTGCAGTTAAACATGGCTGAGTGCTTTCTGCTTAAGGACCTG
ATGTATTAATGCTCTCCAGGTCATTCATATTTGGGGGAAGGAACAAAGAGGGTACCT
Sequence 690
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GATGTAATAATGAGTTAAAGAAGCTAGGCACAAAAGAATATTACTGTATGATTCCAATCA
TATAAAGTTCAAACCAGATCAAACTAATCAATGAACGAGGAGTCAGGATTCTGGTTATAT
TCAGGGATAGTGATGGAAGAGGGCTATAAGGAGGGTGTCTGGGTGCAGGTCATGTTCTAG
ATCTTGATCTGAGTGGGGGTTACATAGGTGTATTCACTTCATGAGAATTCAGAGGGCTGC
ACACTAATGATCTGTATAATGCTCCTCTATAGTATGTCACACTTCAAAAAAGTTTACAGA
AACAGTTCCTTCCTAATTTTCACAGGGCCTAAGAGCTAAAAACGCAGCCCCAG
Sequence 691
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TGACAAAGATAGACCACTGGAACAATGAGAAGGAGAGAATTCTACTGGTCACAGACAAGA
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TGTCCCGCTGGAACCCATGGTCCACTGAAAGTTCCTTATGCTACTTTCACTGAGCATCCT
ATGAAATACACCAAGTGAGAAATTCCTTGAAATTTGCAAGGT ·
Sequence 692
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CTCGAGCAATCTGCCCACCTCGGCCTCCCAAGGNGCTGGGATTACAAGCATGACCTGCCG
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GAATCCTTAATCCCTAACTCATCCATGTTGGGGTTTTTT
Sequence 693
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CTACCAAAAAAAAAAAAAAAAAAGTACCT
Sequence 694
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GGAATNTGATGCAGCTGTGGAAGACCAGGTGGAAGGGTGTTCTGTAGAAGTTGTGCGCCT
CTCTGTGGCCGGGGTGCTGTCCATGGTACCT
Sequence 695
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TTGCACCTTGGGTCATGACAATGCGTGGCTACTGAGAGCTGTTGACAGAGTGGACAGGGC
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ATGCCGGGCTAGCCCCATGCCACAAAGGCTCAGAAATGCCCTGCAACATGTGGGACACCT
GGTAGTATCTACATAGGGGCCAGCATCCATCCCAGCTGCTGGGGGTGGCTCAAGAGCTGT
GAGGGACACCCTTTCCTGCCTGATACCGTGGACCAGTTTGCAAAGAGCTGACTGTCCTGC
TAGGCCCA
Sequence 696
TAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCGGGCAGGTACTTTTTTTTTTTTTT
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TGACCTCAAGTGATCCGCCCACCTTGGCCTCCCAAAGNGCTAGGATTACAGGCATCAGCC
ACTGTGCCCAGCCAGCCCTATGCTTTTAAGAGTTCGATGGTTGAAAGAGACTGAGCGGGG
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CTGAATCTGAAAAAGATTATTTAACCTTTATGTGTCTGAAATACTATATTGTGCGAATTG
TACCT
Sequence 697
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TAATGGAGGAAGATAGCAAATAGGAAACATATTGGTGAGGAAGACTGGAGTTTGATGATC
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TGTAATCCTACACTTTGGGAG
Sequence 698
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TTTT
Sequence 699
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TGTCTATAGTCCTAACTACTTGGG
Sequence 700
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AAAGTGCTGGGATTACAGGCGTGAGCCACCGCACCCGGCTCTTTTTTTTTTTTTTTTAAAA
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TTCTTCATGGTGACACTGGTCTTTCCCAAGAGGTTTCAGCTAATTCAGTCTATCAGATTT
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CGGCGGCCGCTCTAGAACTA
Sequence 701
ATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAGAAAAGGCTGATACACAC
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GTTGCCACTCAATAGGCATGACTAAATAGTGTACCTCACTGTTCTACTTTTTATAATTAA
AATTTTAGAGGAAGCTGAGTTCTTGTATTTAACTACAAGTTAGAGACTCAGCCCACAAGC
TTTTTTTTTTTTTTTTTTTAATATGGTTTCTTTTTTTTTTTTTTTGAGACGGAGCCTTGCTNTG
TCACCCAGGCTGGAGTGTAGTGGCGCGTCTNTGCTCACTGCAATCTCTGCCTTCCCGGTC
CAAGTGATTCTCCTGCCTCAGCCTCCTGAGTAGCTGGGATTACCGGCGTGCACCACCACG
CCCAACTAATTTTAGTATTTTTAGTAGAGACGGGGTTTCCCCATGTTGGTCAGGCTGGTC
TTGAACTCCTGACCTTGTGAACTGCCCACCTTGGCCTCCCAAAAACGCTGGGGTTACAGG
CGTGAGCAACCATGCCCAGCCTTTTTTTTTTTTTTTTATTT
Sequence 702
AGGTACGCGGGATATATNTAAATTTAAGAAANCATCCCCGGTAATATGGCTCTTCATAAT
TCTAAGACTAAGGCTGGGNTAGAAACCTAACCACCTACCTTACAAGNGAAGGGGGCTATA
CCATGGGGTAAGCCAAGTTTGAAATTTATGGGGAATCNTACCCAACTTGGNTTAAGGGGG
CCCTNGGATTTGGCCTNGGGGGCCAAGNNTTTTCTGTATTTTTTATAAAAGGTGATCTTN
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AAAAATTCACCTTATTTGGGCCTTGGGGGGAAGGTAGGGTNGGGCTTCAATAGCCCTTGG
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GGGGATCC
Sequence 703
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ACCCCAACTACACCCACCTCTGGAGCAAACTGGGAAACTTCAGCTACTCCTGAGAGCCTT
TTGGTAGTCACTGAGACTTCAGACACAACACTTACCTNAAAGATTTTGGTCACAGATACC
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Sequence 704
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Sequence 705
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TTTGTGGGATAAAGGAGTGAATGATAAAGTGAAGGACGACTGTCCCCGCGTACCT
Sequence 706
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TGAAAAAATTTGTTATCCCGCTCCACAATTTCNCACACCAAACATTACCGAAACCCGGGA
AGNCAATAAAAAANTGGTAAAAAGCCCTTGGGGGGGTGGCCCTTAAATGAAGGTGGAAGC
CTAAACCTCAACAATTTAAATNTTGGCGGTTGCGGCTCAACTTGGCCCCCGCCTTTTTNC
CAAGANGCGGGGGAAAAA
Sequence 707
GGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTGAACATCCATGGCAGACGCTATT
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GATGGAGAGGTAGAGGGTAAAAACATCAACTGAAGGATTTAGCATTTGGGGAAGAAGGAA
GAAGCCCAAAATGGAGTAGATCAAAGGCTCCCCGTGAACAAATTTAAAATTAAGGAGAA
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GAGAACCCCCCAGGCAGCCTCGTCATCTGGCCAG
Sequence 708
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTGGGGGACAGATATCATAT
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GCTTCTTCCTTGACTAAACACTGGGGTTGCTGCCAGTGGTAATTGGCTTGAAACCAGCTA
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Sequence 709
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GCCT
Sequence 710
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Sequence 711
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Sequence 712
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CAGGTATGGTTAAAATGTAAATGAAAGAA
Sequence 713
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GCTTCTGAGACAAGATGATTTTAAAACAGTTATATGCTCTAAATTAAAAATTTA
Sequence 714
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NCCAATNTTTNNGCCAAAATTTCCAAACCAAGGGCCCTTTCNAACCTTTGGGCCAAGNTC
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Sequence 715
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Sequence 716
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Sequence 717
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CNCTCACAGGANAACCAAAGGTGGTCAATAGGTTCCTCAAGCCAGGTGGCCACCCCAAAG .
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CCCCAAGGAGGTTTNCTTTTTGGTTTTCCTAACCCTTCTTAAAGGGGAGGAATTTTAAAG
GGGAGGTGGTTAAAAANCAACCAAAAAAGGGTTTGNAAAGGGNTTTTGGGGGAAGGNTTT
GGGAAAAAAAANGNTTTTTTAAAGGNA
Sequence 718
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTGACTGTCTCAAATTCTT
GGATAGCTGTCCCTCATGTCACCTAGCTGCTGAGAGCTTTGTGATCCTAACAGGTGATGA

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CTCAGACCGACACTGCATTGGTAGGAATTCCACAAATAGGTGCCTCAATGTGCCTAGATT
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CCGGGCGGCCGCTCTAGAACTAG
Sequence 719
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CAGACCGACNCTGCATTGGTAGGAATTCCACAAATAGGTGCCTCAATGTGCCTAGATTGA
AATATCAGCCTTTCCCANACTGACCTGATGGGNTGACTTCAGGTGTGGNGTAAACACCTA
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TGAGTTCTGAAATAACAAANGATTTGTCTGACATTCATTCTAAGAAATTCATTCTTACCT
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Sequence 720
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TGTGCCCAACTGGGTTTCCCAAGCTATGTGAGTTCAGATAACCTCAGAGTGAGCTCGCTG
GAGGGGCAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTCTTGCCAGATGACAAGGTG
ACTGCATTACACCACTCAGTATATGTGAGGGAGGGGATGTGCCTCTGGCCACGTGGTTAC
CTTGCAGTGCACAGCCTGTGGTCATAGA
Sequence 721
CCGGGCAGGTACCGCTGTGTCCGGGTGGGTGGTCAGAATGCTGTGCTCCAGGTGTTCACA
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TGTGCCCAACTGGGTTTCCCAAGCTATGTGAGTTCAGATAACCTCAAAGTGAGCTCGCTG
GAGGGGCAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTCTTGCCAGATGACAAGGTG
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Sequence 722
GGAGAGGAAATGTGTAGGGGTGAGGGATGATACAAGAAAGCCAAATCCTCATCTTCTATA
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Sequence 723
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TTGCTTCTACTGCCTCCCTTGCAGCTAGAGGCAGGCACAGGACTAGCCTGTCAATTGGAT
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Sequence 724
GGGGCCATTGAGACTGCCATGGAAGACTTGAAAGGTCACGTAGCTGAGACTTCTGGAGAG
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TTGTGTGCAGCTGCAGCGGATTCCTCTGAGACGCTTGTCTATCGCATCTGCCNGGGCAAG
TNTCACCTTCCCTGGGATGTNCCCTTGGACAAGANACAAGGGAGGAANGGCCTTAANGAT
CCTANCTGGGGGGGGA
Sequence 725
TAGGGNGAATTGGAGCTCCCCGCGGTGGCGGCGCCCGGGCCGGTACCCATAAAAATTAAA
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Sequence 726
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GTCTGTACCTGCCCG
Sequence 727
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Sequence 728
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CCCA
Sequence 729
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TTATTTTAAAA
Sequence 730

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Sequence 731
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GGCAACAAGAGCGAACTTTCGTTTCAAAAAA
Sequence 732
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Sequence 733
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CTCTAGCAGCCTCAGCTTTATATCTCTCAAGAGTAAGTCCACCGTCACAGAGC
Sequence 734
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ATTAAACTCTGACTGTTTCAGCATTATTTT
Sequence 735
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GGTATCGTCCTGCCAACGTGAAGCATTGAATGCTTNATACGTCTCCATCCTGATTGTTTA
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Sequence 736
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GTGNGGATTAACATAAATAAAATGATGCGCAAATGAACACAAAATTCAAATTGATGATGT
GTACCTGCCC
Sequence 737
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GGGGCATGACCTCCCGCGTACCT
Sequence 738
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TCNCTCTGTCTTCCAGGCTGGAATGTAGTGGCACAATCTTGGCTCACTGCAACCTCCACC
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Sequence 739
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Sequence 740
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Sequence 741
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Sequence 742
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TTCCTTCAAATACTATCCAATCAATGTTGGCTACTTGATTTTCA
Sequence 743
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Sequence 744
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GAAA
Sequence 745
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Sequence 746
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Sequence 747
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Sequence 748
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NNNNGGTACCTCGGGCCCGGTTTTNAACTAGTGGGATTNCCCCCGGGCTTGAAGGAATTC
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Sequence 749
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CCTCACTGATCACTAACATAACCTAAAATCCCTGCTTTTGACATTAGCATGGNANACATC
CTTAGCAGGCCTAAATAGAATGGCCTTATAAGTGGATCCAAAGGGC
Sequence 750
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Sequence 751
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T
Sequence 752
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CCAAAGTCCTCTCTTAT
Sequence 753
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Sequence 754
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Sequence 755
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Sequence 756
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Sequence 757
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TGACC
Sequence 758
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Sequence 759
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Sequence 760
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Sequence 761
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Sequence 762
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TNCGGNCANCTTAATCACACACCAAATTCCTTTCATGAGATTAAACTNNCACAANTNCTA
CACTTNCTTAAATNTTTGATNNTGNCCTATACTTNTTTTTTTATATTNGCAATCTACTTT
AGGACAGAAATTTACTTTCCTTTCCTCTTGNTTTTGACCAANGTNCTNTCTTNTGCAAAA
TGNANAATNNCTNTTTTTTTCAACTTTCTTTACCAAAA
Sequence 763
TTAGGGCGATTGNAGCTCCCCGCGGTGGCGGCCGAGGTACATGTAATGCTCCTGAACTGT
ATGCTNGACACGGCTGTCTACNTAGGTTTTGTTCTGTGTATTTTATGACTATTTTTTTAA
AAAGTAAACAAAAAAGAATTAGCTGGAAATACCAGCACAGGCAAACCCCTGGAGACAGAA
AGCAGGTGAGTGGTTGCTGGGGCTTGAGCAGGAGGAAGGGCGAGGGACTGCAGAATGGCC
ATGGGCTTTGCCTTCTAGCATGATGAGAATGTTCTGGAATTAGACAGTGGTAACGCTTGT
TCAACACTGCCAGTGTAGTTAATGTCACTGAATTATACACTTTAAATGGCTAACATGACC
AATTTTATGTTATATATATTTTACTACCACAAAAAAACTAGCTGGCACCTAAAAACATTC
CATT
Sequence 764
CCGCGGTGGCGGCCGAGGTACTTGGATGGGTTTTGTGTGTATGTTTGTGTGTGCACTNGC
GTCCACCCTGTTGGGCTTAGTGAACTTTTTGATTCAGTGATTTAAAGTTTCTCATCAGAT
TTGGAAAATTCTCAATTACTTTTTTCTTTAAATATTTCTCTTGCCCTTCCCCTCTCTCTT
CTTCCAGGATTCCAATTTCATCGATGTT
Sequence 765
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACGCGGGGGGTTCAAGCG
ATTCTCATGCCTCAGCCTCCCAAGTAGCTGGGACTAAAGGTATCCACCACCACGCCTGGC
TAATTTTTGTATTTTTAGTAGAGATGGGGTTTCACCATGTTGATCAGGCTGGTCTCGAAC
TCCGGCCTCAAGTGATCTGCTCGCCTTGGCCTCCCAAAAGTGCTGGGATTACAGGCATGA
GCAGCTGTGCCCAGCTGGATAATTATTTAATAAATTGGGGAGCATAGGAAGCATAGTATT
TGTGAAGTGGGTAGGCAGGTGTGATGGGGGTAGGTGATGTTACATTTGGGGCATTTTGAA
GTTGGTGGTTCTTCTGAGTTGAGCAGTCAGTCACTCTTCATTTGCTGCACCTTTATCTCA
TTTTAGCCAACAGACATTGAATACCTACCAAGTCTTAGGTATTTGCA
Sequence 766
ACTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAAGAAA
GAAAACAAATACCAAGTATTTACAGATCCAGAGAAAGTTCACAAGAATGGGAGGATGCCA
GTTCCAATGCTTTGTAAAGTCAAAAATAGCCACATTGCAAAACAAACAAAAAAAAACGAG
AACGTTCCCGAGTGTGCCTCCAAAACATAAAGGAGAAAATCATACAGAAAAACCTCATGT
AAGGGTTGGAACTTGAGCAACCAGCTATCCAAATACAGAGGGGAATCCTCGCTTAGCTAG
GGCATGGCCTGAG
Sequence 767
AGGTACACACAGTGATTTGGGGTCCTTTTTCCTAAAACAGCTTCTTTATCAGGACTTTGG
AATTCTGGGTGAGATAGAAACACTGAAAACAGGGCGGAAGTTTTTTCTTCTGGCTTCTTA
GTCCATGGAGGGCTCAGCGTGGAGAGGATATGCCGTGGCATTCTCCCTGGGAGACCACAC
ATGTTCCCGACAGCTCAGACCCCAGACCCGCACATGCTTCTTGACAGTTNAAACCCCAAA
CCGNAGGNGCTCCCGACAGNTNAAACCCCANACCCCGCGTACCTGCCCG
Sequence 768
CCGCGGTGGCGGCCGAGGTACTTAATAATTCATAATTTAGCCATGATAGTATCTAAGCTC
ACTTTCAGAATTATTGCATACATGCCTTAGGGAAGAACCTATCCACTAATGCTTTTAATA
ACTTACATAGATTGTGTTGCGGCAAGTCAAGTTTTAATATAGAGGAAAGGGTTTATCTTA
TCATAGTAAAATAGTAGTGATGTGTTCATAATTTACTATTTGCATGGTATATTATCAAGG
CTGTAAAAGCTTGAATTTGCCTTTTCCACATCTTCATTTCAAATTAATTTTTGTGAGGAC
CCAGAGAAGTGGGTAGAACCCAAATGCCCATGNGGGT
Sequence 769
GGCANGGTACAAATTCAGGGGAGGATGGAGCAGCTGCAAGCCTGGCTGGCATCCCATGCC
AACAAGGTGACCCAGTAGATAAGTGACAAGGTGACTGAGCTGCCTGGTGCTCTTGCATAG
AATTTTCAAGTGTTAGAAAAATGTCTCCATGCCTTGCAATTTGTCTCTTGTGGCCAAGCC

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TAACTCAGATGGAAATGCAGAAATCACCCGTCTTCTGCGTCGCTCACGCTGGGAGCTGTA
GACCGGAGCTTGTTCTAATTNGGCNATTTGGGTTCNTCCCCCCCGGGNNCNTN
Sequence 770
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTTTT
TTTTTTTTTTTTTGAGGNGGAGTCTCACTCTGTTGACCAGGCTGGAGTGCAGTGGCACAAT
CTTGGCTCACTGCAACCTCTGCCTCCCGGGTTCAAACGGGTCTCCTGCCTCAGCCTCCCA
AGTAGCTGGGACTACAGGCGCATGGTGCCACTCCCGGCTAGTATTTTGTATTTTAGTAGA
GACGGGGGTTTTACTGTGTTGTCCAGGCTGGACTCGAACTCCTGAGCTNAGGCAATCCAC
CAGCCTCAGCCTCCCAAAGTGCTGGCATTACAGGCATGAGCCACCGTGCCTGGCCTCTTT
CATATTTTTTTTACACTTTTCATTTCTTCTTATTTTAAGTGNGCTGGATAGGGGCTCCAG
AACAGAATTCAATAGAAAGTTGTGACAGTAGGAACCCTTATCTTGGTCCCTGATTTTAAA
GGAGGGTTNAAAAAAAAACCCCCCCCAA
Sequence 771
ACTTAGGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTTTT
TTTTTTTTTTTGGAGAGAGGGGGTTTCACTATGTTGCCTAGGCTGGTCTTGAACTCCTGGC
CTCAAGAGATCCTCTTGCCTCATCCTTCCAAAGTGCTGGGATTACAAGCGGGAGCCACTG
TGCCTGGCCTAGAAGATCTGTTTTCTTTTCTCTGAATAATTCTTGTGACACTGTCTCTCC
CTCCATCTCTTTCTGTTTCTTTGTCATTTTTCCCAGCTATCCTTTTTTCCTTGNCTTGTC
CTCTTCTCCCCTCCATCCTAAAACCTTTGATCACAAGCTAGTTTCCTTTCCACATCATCT
GCTCCCCTCTACTAAACGCTATTTCGCCCCCACCTGCTTTCAAGCTGNGCTTGCCTCTGA
GCCCCTCTTTCACCACGGCCCAAA
Sequence 772
NCTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCTCATGCTAGACAA
CCTTATGACTTGAAAACAAAATAATATTTGAAATGGAAATGGCCTCAGTTCCACCCCTGG
TGCCCACATAGCATAGTGAACCTGCCCCTGCAGCATTGCCCATGAGTGCTAAGATCCTGT
GCCCATTTGCATGTCTTCCTTAAACAAAAGACCGCCTTAGTAAGAAATTAGTAAACCAGG
GAGATAATCAACTTATCCCCCAAAAGATTTAAGCCTCTCATTTTGTTTAACCTTCATTGG
GGATTTTAAATAGAAAACTAGGGCCCGGCAGGGTGGCACATGCCTGTAATTCCAGTACCT
GCCCGGCCGCTCTAGAACTAG
Sequence 773
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACATCACCCTGCTGAGGG
ACATCCAGGACAAGGTCACCACACTCTACAAAGGCAGTCAACTACATGACACATTTCGCT
TCTGCCTGGTCACCAACTTGACGATGGACTCCGTGTTGGTCACTGTCAAGGCATTGTTCT
CCTCCAATTTGGACCCCAGCCTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATGCCT
CATTCCATTGGCTGGGCTCCACCTACCAGTTGGTGGACATCCATGTGACAGAAATGGAGT
CATCAGTTTATCAACCAACAAGCAG
Sequence 774
AGGTACGCGGGGAGTGAACGCTCTCGGAGAACCCTTTCCCACGAACGTCCACTTCAAAAG
AACGCGACGGAGCATTAACTCTGCCACTGACCCCTGGCCTGCCTTCGCCTCCTCCTCTTC
CTCCTCTACCTCCTCCCAGGCGCATTACCGCCTCTCTGCCTTCGGCCAGCAGTTTCTATT
TAATCTCACCGCCAATGCCGGATTTATCGCTCCACTGTTCACTGTCACCCTCCTCGGGAC
GCCCGGGGTGAATCANACCAAGTTTTATTNCGAAGAGGAAGCGGAACTCAAGCACTGTTT
CTACAAAGGCTATGTCAATACCAACTCCGAGCACACGGCCGCTCTAGAACTAGTG
Sequence 775
CCGCGGTGGCGGCCGCCCGGGCAGGTACACTACTGGCATAAGAGTAAATTGGTGAGAACT
TTCTGGAGGGGTAGTTTGGCAATGTGTTTCCAAAAAATCTAAAAATTATATTTGCCTCTA
ATCCAGCAATTATACCTCTAGAAATTAATACTAAGGAAAATCTTAAGAATATACCGTAAA
ACTTTAGTTGTAAGAAATTTTTTTGTGGCCAGGCATGGTGGCTCACACCTGTAATCCCAG
ACTTTGGGAGACCAAGGTGGGCGGATCTCCTGACCTCATGATCCACCCGCCTCGACCTCC
CAAAGTGCTGGGATTACAGGCGTGAGCAAATTTTAAATAAGAAGAAACAGTCAACAGCAT
CAGACATAGTAGGTATGTCCAACACCATAATGGCTGAAAAGTGCCCCCTAGTCTGGCAAT

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TAGTAGGTCATTGGTTTATTAATAACCGGCATGTTAAAGTTG
Sequence 776
CCGCGGTGGCGGCCGGCAGGTACAAATCATACCTCCCAAGGTATTGCTCCATTGTGTTTT
TGTGCATTTGGTTTGGATTTTTATGGGGAATTGAAGACAAGTGGATCATAAAGTGCAAAA
TAAAATGCTCTAGAAATGACAGATGGGGCACAATTTCCAAGAAAATTCATCTAGACAGTG
GCAACACTGAGAAAAAAAGAAACATTCAAGAAG
Sequence 777
GAATTGGAGCTCNCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTT
TGCTAGAGATGGGGTTCACCATGTTGGCCAGGCTGGTCTCGAACTCCTGGCCACAAGTGA
TCCACCTGTCTCAGCCCCCCCAAAGTGCTGGGATTACAGGTGTGAGCCACCACTCCTGGC
CCATGTTTAGGATTTATACCAATATTATTAACTTAGAAATAAGTTTCTAATAAATTATTC
CACCCGAACTTAGGGTAACTGAATTTTAATGCTGATGTATTAAGCAGGTTCTTCCTGGGG
TCTTTTGATTCTCAAGGGATCCTTCACTGNGGGTGGACTTCAAATTAATAGGAAGCAGGA
AGGAGCCACCTGCACTGTTTTCTTGACTGGGGATGACACCNAAACCTT
Sequence 778
CCGCGGTGGCGGCCGAGGTACTATGAGAATTTCAAACAAAGAATGAAGCCATAAAACAAA
AAGACTGAATATTTGGCTCTGCCTGGCTCCCAGGCTTTCTACTATTCTTGTGACTTGGCC
TCAACAAAATCTAAAGTGACTTGTTATTTGTGGGTCAGCTTTGTCCCATCCTTACCAGTC
ATGGCTTTAGACAAAAGACTCAGCACCACTCACCCTNTGGGACAGTNTGACTGNGGTCTG
AGNCCCCTGCTTANATATTAGGCTTAAGCTCAGTT
Sequence 779
CACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTATGAGAATTTCA
AACAAAGAATGAAGCCATAAAACAAAAAGACTGAATATTTGGCTCTGCCTGGCTCCCAGG
CTTTCTACTATTCTTGTGACTTGGCCTCAACAAAATCTAAAGTGACTTGTTATTTGTGGG
TCAGCTTTGTCCCATCCTTACCAGTCATGGCTTTAGACAAAAGACTCAGCACCACTCACC
CTCTGGGACAGTCTGACTGTGGTCTGAGGCCCCTTGCTTAGATATTAGGCTTCAGCTCAG
TTCC
Sequence 780
TNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACACACAGTC
AGCATGCGCTGTAGCAATGTGCTTTGCAGCTGGAACTCCTATCAAGCATCCTAGGCAAGG
CATGCACCCCAGCGCCAGAGAGAATCAGGAAGGGGAAGGTGCCCTGAACCTCAGACAAGA
ACCCCTTCCAGAAACCACCACCAAAGCCATCACTGTGTTTCCACCCTCAGACCTGTGTCT
CTTTAGCTTCTTGGTAGAAGGAAAGAAGAGGAGCTTGGGTGGGGCAG
Sequence 781
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCACGGTACCATGGACAT
GCACCCCGGCCACAGAGAGGCGCACAACTTNTACAGAACACCCTTCCACCTGGTCTTCCA
CAGCTGCATCAGATTCCTGGACTGTCACAGACATGACTTCAAACTTGAAAGTTGCAAGAT
CTCCTGGAACAATTTCCACAATGCATACAACTTCATTCTTAGCCTCAAGCACTGAATTAG
ACTCCATGTCTACTCCCCATGGCCGTATAACTGTCATTGGAACCAGCCTGGNCACTCCAT
CCTNTGGANNNTTAAACNTTNAAAAANNNAAANCNNNCCCCTNGGCNTTTTTAAAAANNN
GGNNNCCCCCGGGNNNGGGAAATTTTTTTTTAAANATTTTTTTTCCCCCCCCCCCCCNGGG
GGGGGGGGCCCCCCCCCCCCCCCTTTTTTTT
Sequence 782
NAATTGAGCTCCCCGCGGTGGCGGCCGCCCGGCAGGTACTTCCCTGAGCAGTCGAAGTGG
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AAAAACTTCAATGGCAGCAGTGACAGGATCTGTGCAGCAACAGCATCTGCATCTGGTGCA
ACAGGACTTATTTTCAAATCATCAAGGCCAAAAAGCGATCGGAATGAGAAGGGGGCTTCA
ACAGCAGGCGGATCATTTTCCCCCATGGTGACTATTTCAGGAC
Sequence 783
CNATTGAGCTCCCCGCGGTGGCGGCCGAGGNCTGATGTCCTACAGTCCTCTACCTGATCT
ACGTTCACTGGAAAGTGTNGAGTCTCAGCAGGAAGCACCTTGCTCTCGTGTCCGGCTAAT

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TCGAGTGCTTTACGTAAGTAGAGGAATTGCTGACTTTTGGGACATTTCTGGTCTTGCCAA
AGTTCACCTTGTAGTAAAGCCCCCAAAGATACTTCCCAAATAGATGCTCTCTTGAAAATA
ACTCAG

Sequence 784
CTACTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACATGTCGGCCTATTTTA
TATTCTGTTTAGTGCTTTCAACCCCGAAATCCACCTTCTAACATTAATATTGATATCCAT
CCTCTCTCTCCTCCAACCTCTCTCTCTCTTGCATTTACTTTTAGATTTTCATTACTTTCT
TTTTATTCTGATTCTTGTAAATAGTATAAACTAGATTCTTTTATTTTTATTTACTTTTTA
AATTTATGATTGACACATAATAATTGTATATATTTATGGGGCACAACGTGATGTTTCGGT
GCATGTATACATAGTATAATGATCAAATTAGGGTAGTTACCATATCCATTACTTTAAACA
TTTATCATTTCTTTGTGGTAACAACATTAAAAATCTCATCTAGAATGGCGTGAACCCTGG
AGGCAGAGCTTGCAGTGAGACGAGATGGGCGCCACTGCCTCCAGACTGGGCGGACGAGCG
AGACCTCCCNTCTCAAAAAAAAAAAAAAAGG

Sequence 785
GCTCCCCGCGGTGGCGGCCGGCAGGTACGAAATGAGAGAAATGGTTTAGTAAACGTATAA
GACATCAACATAGNAAAGTATTCTATAGGNNTATGTGTTGGAATTACAAAGATGAAGAAA
AGATACAGGCAAGTATTTGATATACTNAATTAAAAATAGCAAGATGTAGAGTAGNCATGT
ATACAGTGATAGCAAGAACATGGATCCTTAAGGACAAAACTGAAACATAATGCAAAAAAA
GAAAAATATGCAAATTATTTTTCGTATGATGTAAGTTGTAAATAT

Sequence 786
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGNGTACNCGGGCCTATTTCTGAA
TAACTCAGNGGCTTAAAATTATATCCCAAAGTAGNGGTATCACAGGGTTTCCTGATGAGG
ATAAATGGGCCTGAAGTGCTTATGGGCACCCACTATGTATCATGGNAAAACTTGCACGTG
TGTGTGTGTGTTGAGAGAGAGAGAAAAAAANAATAGANAAAGTTGGTGAGAAAAGGGNAGG
CTGTTTTTTGNNCCGAGGGNTGTNTGGTTGGGCTTT

Sequence 787
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGNACACANTAAGTGAAGGGCC
AAGACTGACGGCTGATAGGACAGGGGTGACCAGTGGTGGGGAGGGTAGTGGGAGCAGTCC
ATCCTGGAATCTGGCATTCAAGGGGCGCATTGTCTGTGGAGGATTTAAAAATAATAAAAC
CAACTAAAGGCAGTCTGCTTTTTATGGTCACCAGGCGCCAGCAATTCTAAATTTCAGTGA
TAAAATATTCCTCCTCACTGGACACGAGAAGCTGGCTTNTCCTATTCCCCAGTACCTGCC
CG

Sequence 788
GGNGGCGGCCGCCCGGTTTTGGACGCGGGTNTNTGCCCTNACTTTTTTTAGCGGAGCAGAG
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AGAATCACAGGCCAGAAGAAGAAGCTGTAGCCTCGGGAATGGAAGAGCTCTCTGAAGGGG
AAAGGGGAGAACAGGAATGTNCCAGGAGCCAAGGCTCATCTATAAGGGACTTNCACATTT
AGGATGTAGAAGAAGGAAGCAGAAGCAGGGGATGACCAGAAATGGCCCCAGAGATGAGAT
GAAAGTTAGGAGAGCGGNGAGCAAGCCTTTAGGTTTCACAAGGGAAGGAGGGAAAGTAGG
TGTTAGGTGCTGCCAAGATCAGGGAAAATAAGCAGAAGACCAGGCCATTTTNANTTGCNG
TGG

Sequence 789
CCGCGGTGGCGGCCGAGGTACCACAATCAACTCAATCACAACATATTACAACAAAACCCT
TCATCTTTTTCCTTAACCCACTGTAACACAAAGCAGAGAATACAGATTAGCTTTTTTATT
TGTCTGTTTGACTTCATCTCTTACATACCTCTATTTCAGTATCTATGATATTTTCCTCTT
CTTATCTGTTCAATGACAGTCTTCCCTTTTAATATTCTAAACTTGTCAAGCACAGCANTT
AAAAAAGTATTCTCATGTATATATTTTTATCTTTAGAGCATCGCATAAAGNCTGATACATA
GGAAGTTTTAGATGCATATTTACATTGGGTAGATGAATCCAGGGGAAAAG

Sequence 790
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AAGCATTTGGAGCTGTTAAACACAAATCAAGGCAACCAGAAAGGGCATCTTGGCTTCAGG

TABLE 1
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CTGGGCATAACCATCCCATTTGCCACATAAAAGTCTAGTGGCTACTCTGCACCCTTTCTG
GGTAGAAGCAGAGTTAGTTTGGTCATGGGGGGCCCCTGTGGGACAGTGTTGCCCAGACAGG
TACCTCGGCCGCTCTAGAACTAG
Sequence 791
AACCCACTATAGGGNTNATNGGAGCTCCCCGCGGTGGCGGCCGCCCTGGCAGGTACTGNC
TGTCTCAAATTTTTGGATACGCTGTCCCTCATGTCACCTAGCTGCTGAGAGCTTTGTGAT
CCTAACAGGTGATGACTCAGACCGACACTGCATTGGTAGGAATTCCACAAATAGGTGCCT
CAATGTGCCTAGATTGAAATATCAGCCTTTCCCAGACTGACCTGATGGGTTGACTTCAGG
TGTGGTGTAAACACCTACATTTTAATGTAAACATTTCAGTGTAATCAATGAGAACTATCA
TTCTGCTTTAATCACCATGAGTTCTGAAATAACAAAGGATTTGTCTGACATTCATTCTAA
GAAATTCATTCTTACCTGACTAAGAAACTTTTTAACCTGGCACAATAATAAGAAATGACC
TGGNAAGTACCTCGGCCGCTCTAAAACTAAGGTGGGATCCCCC
Sequence 792
NGGCGAATTGGAGCTNCCCGCGGTGGCGGCCGCCCGGGCAGGTACGCGGGCAAAATGTAA
GTTGGTAAAAGACATTGGACTCCAGCTATGTTCTTTAGAAAGAAGGTATTGGACTCTGGC
CATGTTCTTCAGAAAGAACATGCCTGGCTTTTTCACGATTTGATCAGTCTTCTTAGACCC
TGAACCCCACCATGAAATGGCTTCCCCAGACACAACCCGAGAGAGTTATGCTTTGTTTCT
CAGCTAAAATATTTTGCAGATCTTAATTTCCTGGGTCATTGCATCATTTTTTTTTTTTTT
T
Sequence 793
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCAAGTATACCTTTT
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CCATCATCTCTTGGTCTATTTCTATGGAGTTATTTTTTCCTAGTTATTGGCAGTTTGCTT
ATCTTTTATGTGTCTAATAACTTTTAATTGAATGTAGAACATTATGGATCTTATATTTTT
GAGAATCTGAATGTTTAAAATTCCTTTGAAGAGTTTGTGTTTTCTTCTGGAGGCAGTTTA
CTTACTGGCTGTGAGCTCAGTCCTGTTGAGGCTGTTTNGCGACNNNCTGTGGCTTTGTCA
GGGTGGGGTGGTGGATCAGACATCTGGTCATCAAC
Sequence 794
ACNCCCGGCCAAAAGGGAGNNCACAGGGGGGGGGCCAATATATAAGGGGGGCAAGGAGGGG
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AGGNGGGGGGNGNCCANGCAACCNAAAGGGACNAACCCAACANNNAAGCGGGGGAAGGGGG
CACGANAGAANANANANNANAGGNGANNCAAGAACCAANCAAGGGNGGGGGGGGGAAGGGC
NNCAAANGGGNNNAAAAAANNGGCNCAGGNNACCNAANGGGGGGGNNGGGGCNNAGAANGGG
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GGAGGGGAGGNNANNAGCCGGCGCGNAAAAAAAAAAAAACAANCCAGGGGCAANGGGGGNNG
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GGGGGGGGCNCNGAAGGGAAAAANAACCCCCAAGGGAAAANCCCANGGAANGGGNAANAAG
GGGGGNGGCAAGNGGGNANCCCGNAAAAANAAAGGGGAAACNGGGGGGANNGNCCCAAAAC
CCCNGG
Sequence 795
CCGCGGTGGCGGCCGAGGTACTATCTCTTAGGAGAAGGCTGACTTGAAGGCTGTGAAAAA
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AAGAAGGGATTAGAAAAGCATGTCATAATTTCCAGATAGCATAATTATTTACATTAAAGA
TCCAAGAGACTCAGACCTAGTAAAAGATTTTGGCCACATTGTGACATTTGAGATCACATT
AAAAAAAAAAAAGGAAAAATCAAGNGATACTAACATCACCAATTAACATCATNAATTAGAA
AATTTATCCATCAGCNGTATTNNNNNGGGCTCAATGCNTTGTAATGCCGCATTTCGGGAG
GC
Sequence 796
CCCCCCCCGGAGTTTCAGCGAAAANCCCGGCCGAGGNACCNCNCCNTTACNCCCAGGNTT
ANAAACNCCCNGGTNTNGNCCCAGGAGAGGCGGGGGGANCACCGCGCCNGGCCAGCANGGN

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CCCCTNCTAAATNNNGNNGTNNAAGGAANCNGGACCCCAAANNCNCGCCCCCCACGAAAG
GAGCCTGGGAACTACCAGGGCGTGAGCTCACCGNGCCCGGCCGCTCTAGAACGAGAAGGA
ACCCCCGGGCTGCAGGAAAAACNATAACAAGCNAANCNAAACCCGACCACCCCAAGGGGG
GGGCCCGGGACCCAGCTGTTTGGGCCCTCAANACNAGGGAAAAATTGCGCGCTAAGNGCN
CAANCANGGGCCAAAANGCTGGNTNCCCCGGAGGGGAAAAAAGGACACTCCCGCGNCACA
AATTACCACNCAAAACATAACNGAAGCCGGNNAANCAATAAAANNGGGGAAAAANACCCC
NGGGGGTGGCCCTAAAAGGAGGGGGAGCCCCAACCACCAACAAAATAAATTGGGGG
Sequence 797
AGGTACTATCTCTTAGGAGAAGGCTGACTTGAAGGCTGTGAAAAACTAAGAAAACACCAA
CCATTCAACAGTATACTAGAATTCCTTTCAATGCATAATAGAAACAAGAAGGGATTAGAA
AAGCATGTCATAATTTCCAGATAGCATAATTATTTACATTAAAGATCCAAGAGACTCAGA
CCTAGTAAAAGATTTTGGCCACATTGTGACATTTGAGATCACATTAAAAAAAAAAAGGAA
AAATCAAGTGATACTAACATCACCAATTAACATCATCAATTAGAAAATTTATCCATCAGC
CGGGTGTGGG
Sequence 798
GCGGCCGAGGTACAATTCAACAATTNNTGGTCCAGGATCATGAATGGGCCATTNNTAGTT
CTGTGTGTGCTTAAACACATTTTTTTTGTGGGGTGCTGTGGATGTGTGGATGTAGCCAAAA
AAAACCCTATTGTGGGNTNGGTCCTGGGGCAGAAAGTCTGGTGCCAGAGAGTGGGGTTCT
GGGGGTCTGTCTTCATAGTTTGGGGTAGCACTAAAATCCTGTGAGCCTTTCTGGGCCTTG
GTAACCTCCCCTGTAAGTTAGCTGTTAGATAATTCAGCTGGGTAGCATTTTATACCTGGA
TGATGTTCTAAAGTCCAGCCACANAAGGCCNNNGTCTGGCAGAGTGAGAATTNCCTTTGA
AGAACCTTNAAACTGNTNCCCNAGAGTGACACAGGGGNNCCTNGGGGAAAAANCNAAAAAG
NNNTTGGGAATTCTNTNCAAAAGNAAGNCCCATTTTTTTTTTGCCNNNATTTNGGCCCNCG
NTAATNCCCCNCCCCAAGNAAAAAANNAAAAAAAANTNTTTTTTTTTTTTT
Sequence 799
CGGTGGCGGCCGCCCGGGCTTGGTACCCTCTGTCACGGCTTCCCTTTGCTGGAAAAGGGA
ATTTCCCAACCCCGGGTGAGGCAATGCCCCGCCCTGCTCCGTGGGCTGCACCTGCTGTCT
GTCAAGCCCCAATGAGATGAACCCTGTACGCGGGGGCCTGGGATCTCAAAATGGCGGCCC
CGTGCGGAAACAGCGTNTGGGAGCAGANATTGTTGCCTCCTGAA
Sequence 800
GGGCGNTTTGGAGCTCCCCNCGGTGGCGGCCGGGCAGGTACTATCTGGAACNTGTAGCTT
CCTTTNGCACTGCAGCATGGGAAGCCAGAGTTGATGATTCATACACCAGCATTTACATTT
TTCAGCATGAAAGTGGTATGTTCTTCAACTCACAACCCATTGGCCAGAACCAGTAACATG
ACTTCACCTAACTGCAAACTAGCTGGAGAATTGTGGGAGAGCTCATGG
Sequence 801
CCGCGGTGGCGGCCGAGGTACCATTTAGCACACAATTTCCATGTCCCAAAAGCAACCCCC
ATAAACAGTGACTATTTTTTATGCTGTTTTTCTTTGCCCCAACACTTTTATCATTTGATA
TGTTATATCTTGCTTTTTTTTTTTTCTTTTTTAATGGAGTCTCACTCTGTCACCCAGGCTG
CAGTGCAGTGGCGCGATCTTGGCTCACTGNAACCTCTGCCTCCTGGGTTCAAGCAATTCT
CCTGGGGGGTGGGGAGGTTTGCAAGTGATCCAAGATTGCGGCTCTTCACTCCAGACTGGG
NGAAAGAACGAAACTCCATCTNAAAAAAAAAAAAAAAAAANAAAGTACCTNCCCGGGCCGG
CCGCTCTANAACTAGGTG
Sequence 802
CCGCGGTGGCGGCCGCCCGGGCAGGACGCGGGATGGTGTCAACTTATGTCAGGACCCATG
GGCCCTCCCCATGCACACAGCACTCTTGGAATCTCATCCTTTTCCATGGCTCTGGCTCAC
ACTTCCACAGCATTTACTCCTAAATATGCCCCCTGGGTTCAAGGGTGATTCTCGTGCCTC
AGCCTCTCAGGTAACTGGGATTACAGGCATGCACCACCATGCCTCGTATTTTTTTTTGTGT
GTGTGTTTAGTAGAGACGTGTTTCACTATGTTGTCCGGGCTGATCTCCAACTCCTGTAGT
CAAGTGATCTGCCCGCCTCAGCCTCCCAAAGTGCTGGGATTATAGACATGAGCCACCACA
CCTGATGTCTGATGCTTATTTATTATGTGACCTTAGCGAAGTGTGGGTAGTCATTAGTGC
TGGTCTATCTCTATACCTTCCCCAGGCAAGGTAGGATTGCACTTCCCGTCCACT

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Sequence 803
AACGACCGCCCGGGCAGGTACTAAGCCAGGACCTCAGTTAGCACTAAGCACTCTTACTAT
TGCCCCCACCTGGCACAAAGCAAACTGAGATCTTAGTTGGGCCCATCATGTGTCATCTGA
TTGTCTTAGAAGTTCTTTTTTTCTAAGACAGAGTTTTGCTCTTTTGGCTCAGGCTGGAGT
CCAATGGCACAATCTCGGCTTACTGCAACCTCCGCCTCCCAGGTTAAAAGCGATCCTCCC
GCCTCAGCCCTNCGAGTAGCCGGGACCACAGGCACCCGCCACCACGCCCGGNTAACCTT
Sequence 804
TACTATAGGGCGAATTGGANCTCCCCGCGGTGGCGGCCGCCCGGGCAAGGTACTCTCTAT
GACTATCAAGCTCAGGCCTCTCCCTTTTTTTAAACCAAAGTCTGGCAACCAAGAGCAGCA
GCTCCATGGCCTCCTTGCCCCAGATCAGCCTGGGTCAGGGGACATAGTGTCATTGTTTGG
AAACTGCAGACCACAAGGTGCGGGTCTATCCCACTTCCTAGTGCTCCCCACATTCCCCAT
CAGGGCTTCCTCACGTGGACAGGTGTGCTAGTCCAGGCAGTTCACTTGCAGTTTCCTTGT
CCTCATGCTTCGGGGATGGGAGCCACGCCTGAACTAGAGTTCAGGCTGGATACATGTGCT
CACCTGCTGCTCTTGTCTTCCTAAGAGACAGAGAGTGGGGCAGATGGAGGAGAAGAAAGT
GAGGAATGAAGTAGCATAGCATTCTGCCAAAAGGGGCCCCAGNTTCTTAATTTAAGCAAA
CTAAGAAG
Sequence 805
CCGGGCAGGTACAATGGACTTTGACAGTTCTTCCCAAACAGATCCTAATTTTAAACATTA
GGTTTGCTTTGATTCTTTTCCTTGGGGCTAAGAGCTCACAAAGACTTAGGTTCTGGTCAT
GGCTCCAGAGGCCACACATTCCAGGACAAAGTCTCTCTACAGTCAACGCCTTAGTCCCAC
ATCTGTAAAATCGGAATAATCATCCCTGATCCAGCTATCACATTGCAGTAGAGTGAGACT
CAAATGAGATAATGGAAGACAGTGGGAATGATCATTTCCAACTTGGCCTGGCTGACCCAT
TCCTTGTTCTAAAGTCAGCTCAGGTTTCACCTCTTCCAGNGAAGTTGACCTGGCACTTTC
TTTTAGGATGGCTACTGCTCCTCTGGGTGCCCCGGGGCTCANTGTCTCCCCATCACCGCC
CATGGCACACTTGGAGTGACTGGTCCTTTACTTTGNTT
Sequence 806
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GCCTTCACCCTGCGTCAGTGGACAAGGGGGTAGGAGCCTGCAGAGCAGAAAAGTACCT
Sequence 807
AGCNCCACCGCGGTGGCGGCCGANGTACGCGGGATATGTAGAACTTCACNNGTTTGAAGT
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AACCCTGTNTGTACCTGCCCG
Sequence 808
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CATCCTGCTTAGAGATGAGGAAGATCCTGCTGTTCCGTGGGGAGCTCTTGAGACACCCGT
GCCACCACCCACCTTCTCCTGATTGCCACTTGCTGCCCTTTTCCCATTACCCTCTCCTGA
CTCCATAAACATCTTCAAGTCTTCCCTTTCTCCACCCCAAAAAATGCCCACCTTGGAAAG
GG
Sequence 809
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GCCTTTTTCCCCTTTTTTAAAAAAA
Sequence 810

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CCGCGGTGGCGGCCGCCCGGNCACGGTACGCGGGGATGTCTTCTGAGAGAGTCAGGGCAG
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TTNTGNTGATAAGCAAATGTGAAC
Sequence 811
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CCGCCTGCTGTTGAAGCCCCCTTNTNATTCCGATCGCTTTTTGGCCTTGATGATTTGAAA
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Sequence 812
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Sequence 813
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CAGCCAGGCACCACCAATTACCAGAGGAACAAA
Sequence 814
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Sequence 815
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TGAACATTTTTCACTTAT
Sequence 816
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GCCTTGCAAGTCCCAGAGGCTGCAGCCGTATTTATTCTTCAGGCCAAGACTCTCAGGACA
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·GGATGGCGGCTTCATTTTTGTCCCTCCTACCTCTGA
Sequence 817
GAACCTAGGGCGATTTGGAGCTACCCNCGGTGGCGGCCGAGGTACATTTTGGCAAACCGT
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GGGACCACCTGAGAAAGGTCTGTTACCGTGCATAAACCTCCTTTAACACCTTTTAAAAAC
TCTTCTGGGGGCCGGACTCAGTGGCTCATGCCTGTAATCCCACCACTTTGGGAGGCTGAG
GCAGATGGATCACCTGAAGTCAGGAGTTCAAGACCAGCCTGGCCAACATGGTGAAACCCC
GTCTCTACTAAAAATAGAAAAATTAGCCAGGAGTGGTGGCAGGTCCCTGTAATCCCAACT
ACTTGGGAGGCTGAGGCAGGAGAATTGCTTGAACCCAGGAGGC
Sequence 818
GCCAGGAAACCCGTAAAAAGGGCCCNGTTTGTTGGCGGTTTTTTTTCCATAAGGGTTTCCG
CCCCCCTTGACCGAGGCANTTAACAAAAAATNGACNGCTTCAANGTCAGAAGGTGGGC
Sequence 819
CCCCCCGGTGGCGGCCCGCCGGGCAGGTACTGGGAAATGAGGCAAAAGTNTNTCTCTTCA
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·ATAACAAAGGTGGNGCCCCTTCAGGGAAATTAAATTTTTTTTTCNTAAAGGCCTTGGCAT
TAANCCNTTTTTTTTTGNGGGNNGGGNAAANTTTTTTTTTTT
Sequence 820
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Sequence 821
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CNGNGGGGGGGGGGGAANTNTNNNANNANGGNNGGGGGGGGGTTTNTCTCNNCCCCCCCCA
CNTNTTTTTTTTTTTTTTTTTTTTT
Sequence 822
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TTGATGATTTGAAAATAAGTCCTGTTGCACCANATGCAGATGCTGNTGCTGCACAGÁNCC
TGTCACTGCTGCCATTGAAGTTTTTTTTCCAATCATCGTCATTGGGATCATTGCATTGATA
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CT
Sequence 823
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CCCCTCCATCTCACAGGTGGGGCAGGGGTGTGCTGAGAAGAGAACTTGGGACTCTTGGCC
CCTGTTCAATTCTCTGCTTAACCTGCTAGGCAATTTGGGCCTCTGAAAATTCAGTAATCC
TCATAGCAACTTAGACGTCACCTGGGCCTGTGGTCCCCTTCCTAGCCTAGGAGTCAGAGC
ATGAAGCTCCATCTGTCACATTGGTTTGTTCAGAGAACTACACATGCGTTTTATTTTAGC

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AGCATACAGGTTCCCACTTAGGCATTGAGAGGACATAGGAAGCTGTTTAACTTCCTA
Sequence 824
ATCACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTAGTTATTTTA
AATTCCACTCATAACTTATCGGCCAAAAGTAGTCACATGGCTCCACCTAATCACAAGTGG
AGCGGGAAGTGCAATCCTACCTTGCCTGGGGAAGGTATAGAGATAGACCAGCACTAATGA
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ATGTCTATAATCCCAGCACTTTGGGAGGCTGAGGCGGGCAGATCACTTGACTACAGGAGT
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TACGAGGCATGGTGGTGCATGCCTGTAATCCCAGTTACCTGAGAGGCTGAGGCACGAGAA
TCACCCTTGAACCCAGGAGGCAGAGGTTGCAGTGACCGATATCATGTCACTGCAGTCCAG
CCTGGGTGACAGAGCGAGACCTTGTCTNAAAAAAAAAAAAAAAGAAA
Sequence 825
CCGCGGTGGCGGCCGAGGTACAGATGTATGGATCTCATAGCATTGAGGGGTCTTTCAGAT
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CAACGTCTTAGCCAAAGACACAGAACTATTTAGCGACACTGTCTAGACTCTAGTTTCCAT
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CTCCTGTAGGAGAGGCCAGACCTTTGCCTGCTGCAGCTTGTGGCTCTTCTCCTGCCTTCA
GTTNTTCCATTGCCTG
Sequence 826
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GGCCACTAGACTTTTATGTGGCAAATGGGATGGTTATGCCCAGCCTGAAGCCAAGATGCC
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Sequence 827
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AGAGATGTGGGATTTGG
Sequence 828
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Sequence 829
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Sequence 830
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AAAGGTATGCCCTGGGCATGG
Sequence 831
CCGCGGTGGCGGCCGAGGTACGCGGGTAACAGGAGTCTTTGCTGAGTGATCATCTGTTTA
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GTGTCCTGCCCG
Sequence 832
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CCCCTTCTCATTCCGATCGCTTTTTGGCCTTGATGATTTGAAAATAAGTCCTGTTGCACC
AGATGCAGATGCTGTTGCTTGCACAGATCCTGTCACTGCTGCCATTGAAAGTTTTTTNCA
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Sequence 833
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AACTTGACGATGGACTCCGTGTTGGTCACTGTCAAGGCATTGTTCTCCTCCAATTTGGAC
CCCAGCCTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATGCCTCATTCCATTGGCTG
GGCTCCACCTACCAGTTGGTGGACATCCATGTGACAGAAATGGAGTCATCAGTTTTATCA
AC
Sequence 834
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Sequence 835
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CTTTGTTTCAAAAAAAAAAGAAG
Sequence 836
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GCCAGTAAGTAACTGTTACTTATCTCACAAAGCGCTTGGCTCTGGAAACAATCTAACTCT
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GGGGAGGCCCAG
Sequence 837
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TCCCGCTTTCTTCGCTCACCTGACTCCGCTGCGCCTCGGGTCGT
Sequence 838
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CTGAAGTG
Sequence 839
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Sequence 840
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Sequence 841
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Sequence 842
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CCGGA
Sequence 843
CCGCGGTGGCGGCCGCCCGGGCAGGTACTGTGCTTAGACCAGGAACACAGGGAGGTAGAG
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TTCACAGTGTTTCTGTAGAGATTTTATAAGATATGGTATACACAATGCATAACATAGGAA
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CCTGCTGCATCATCCCAAAGAA
Sequence 844
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GCACAGATCCTGTCACTGCTGCCATTGAA
Sequence 845
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Sequence 846
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TACCAGTTGGNGGACATCCATGTGACAGAAATGGAGTCATCAGTTTATCAACCAACAAGC
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Sequence 847
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Sequence 848
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GTGCCTGCTGGACTGCTCCCCGTCTCCTCTGCTGGGGCAGGCCACGTGGAATTTCCTTGT
GCTGCCTGGCTTGACATCTTTA
Sequence 849
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CAAGCTTTTTN
Sequence 850
CCGGGCAGGTACATGAAAGTAAGATCACAACCACAGGAACCACACAAAATTCAAGGCACC
AGAGGAGCCCAGACTTGGCTGGCAATGCCTGTTTTGGAGCTATTCCACATTTCTGGAAGT
CAATGGGAATACCGGAATATGAAAACACTATGAGGCCGGGCACAGTGGCTCACGCCTGTA
ATCCCAGCACTTTGGGAGGCCGAGGCGGGCGGATCATGAGGTCAGGAGTTCGAGACTAGC
CTGGCCAACATAGTGAAACCCCATCTTTAATAAAAATACAAAAAATTAGCCGGGCGTGGT
GGGGGGTGCCTGTAATCCCAGCTACTCCGGCGGCTGAGGCAGGAGAATTGCTTGTACCTC
GGC
Sequence 851
CCGGGCAGGTACTTTTTTCTTTTTTTCTTTTTTTTTTTTTGAGTGGGGGCGGGGTTTCGCCA
TGTTGGCCAGGCTGGTCTTGAATCTCGGGTGATCTGCCCGCCTCGGCCTCCCAGGGTGCT
GGGATTGCAGGCGTGAGCCACCACGCCCGGCCTCGATATATTCTTACAGTGGAATACTGC
TCAGAAATACTGATGAATCTTAAAAAACATGATGTTTAGCAAAAGAACCTTGGTATAAGG
TTCTTGGTATAAGGGATACATACTCTATGATTCCATTATATGAAATTCTAGAACAGGAAA
AACTATAGTGAAAAACAATCAGATTAGTGGTATCTGGGGTAGAAAGTAGGAGGAGATTGA
TT
Sequence 852
CNANAGGGCTTTTTGGGGGCAAAACCGCGGNGGCGGCCGCNCNAGAACNAGNGGANCCCT
NTTGGGGGGGGAAAAAAACCCCAAGCCCACCGANACCGNCGACCNCGAGGGGGGGTNCCGG
NACCCAGNGNNNGNCCCCTAAANAGAGGGNNAANNGCGCGCNNGGCGNAANCANGGNCAN
AGCNNGNNNCCNGNGNGAAANNGNANCCGCNCACAATTTNTCTTTTNTAGNCGAGCCGGG
AGCAGAAAGCCCNAAGAAAAAAGN
Sequence 853
AGGTACCCACAGCCCTTTCTTTTGGAATTCCCTAGAAGGGGTCTGTGCCACATACAGGAA
GTAGGGAGGGTGTCTTTGCAGCATATTTCTTCTCTTGGAGTTAACTGCGAACGTTGCACG
GCGACCTCTTGATCCATTCTGTGAAAGCCCCAAGCCTGTCATGCAATAAAGACGTCCAGT
TTCACCGCAGCAGGGAGGCCGCATGAAATATTCCACTTGAACAAAACCACTTAGCAGTTT
ACATCAATGCTTACCCTGTCGCATTGAAAGTGATGTGAACCCACACCCAAGAGCCCCCAA
ACCAGCACGTTGATACCAAGTTTCCCCAGCTGCATCCAAATCAATTCCTTCTT
Sequence 854
CNTTTGGGGGCTAANCCGCGGGGGGCAGCANCNNCACCGGCAGCGCGCNATTCTTTGGGGG
GGTGNAAAACCCCCAGACCCCCGAGCNCNNCCACTCGNCNCACCANTNTAGAGACTGGGG
CCGNTCCNCNnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnTTTTTTTTGGGGTTTTNAGNGAGGGGAANCG
CNCGCAAAAAAANAATCNCGGCCANAGGGGGGGCCNGGGNGAAANTGTTANCCGNGCACAA
NNNCACACAANANACGAGCCGGGAGCAAAAAGAGGAAAAGCCNGG
Sequence 855
CCGGGCAGGTACGCGGGCTACACACACAGTTCGGATGCCAAGGGTGACACCCCATTCCCT
TCACAAGAGGCGGTTCTGTCACAAATCAGCACTCCACCCCCACCACACCTCTCAGTGAAT
GAAGTGCTGGTGGTCTCACTCCCCTGGTGACCCTTAGCCGTGGGATGGGGTGGTTACACT
AAGGCTTCAAGCTGAGAATGGCCATCATGGCGGGAGGCTGTTTGCAAAGGCACCTTCTGT
CATCCTGGGGTTGGCTAAGTCAACTCCACCCCTTCCCAAAAAAAAAAAAAAAAAAGTACCT

Sequence 856
GCCAGGATTCAAACCAGGGANTTTGCTCCAGCACTCCGGCTCTTAACCTCAACCGTCTGC
CTCTCCACAAACACCAGGATCAACCACCAAGACCAAAAAAACAGTCTCACAAACCATCAA
ACATTGCACTTGGTGGCTCAGGACCTTAGCTTCGTCTTAAAGGTCCCTGTTATGCTTTTT
CTTTTTGCCCCAGTGTGGAGTGGTCTTCGTGTTTGTGAGTGCAGGGGTCAGGGGTTGTGT
CTTTTCTTCTTGTNCCCTTCCAAGAGGTGACATGTATCCTTGATACTGGAAGGGCCCTT
Sequence 857

TABLE 1
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AGGTACGCGGGCACTCCAGCCTAGGCAACAGAGCCAGATTCTTTTTTTTTTTTTTTTAAAA
AGTCTTTTAAAAAATTCTTTTATTGTGCTGATTTTATTGTGTCATGAAGTGTAATATCGC
ATGTAGGTATGTGTCAAGTATACAGAGTGTCAGGCATACGGTGTTCAGTCATAAGCAGTT
CTGGCCTTTGGCCCTGCACTGTTTGTTGGCTTTTTAGGTAGGAACCTTCTTAGAGTAAGA
CTGTCATGCTAAAATTGTAGCAATCAAATGTGCCCCCCATACAACTCATTTGAGGTTGAG
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Sequence 858
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GCCCACANTTNNTTACAACANACNANCCGGGAGCATAAAGCCGCAAANCCAGNGGAGCCA
AAGGAGGGAGCGAACCCACAG
Sequence 859
GGCAGGTACAACCTCCATCCCCTGGGCTCAAGCGATCCTCCCATTTCAGCTCCCCCTGTA
GCTGGGACTACAGACACACACCACCGTGGCTGGCTAATTTTTGTATTTTTTGTAGAGGCA
GGGTTTTGCCATGTTGCCCAGGCTGGTCTTGAACTCCTGAGCTCAAGTGATCTGCCTGCC
TCGGCCTCCCAAAGTGCTGGCATTACAGGCATGAGCCACCATGCCTGGCTGGGACATTAT
TCAAATTGAAGTGAGGACATGATGTTAAAAAGTTCTGGGCAAGTATTTTACAAGTTAAAA
TACAGATGTAAGACTTGACTTGATCAAATGCCCAGCTCTGTAATTTCACCTAAATTG
Sequence 860
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CACAGCCAGCTCCGCGTGTCTCAGTCTGTAACTGATAGCATTCCACTTCCTGCCTGTACC
TCCCCGGC
Sequence 861
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CGNCCNACCNCAGNGACNNGANGNATNTACNGGAAACAGGGCGCAGCCCNAGGAAGGACA
GNNGAAGNCCNNACNGNGCAAGNCNAAANNNNAAGGAAAANNAGNCCCGCGANGAGNNNC
CNCANGCTTTNNNTNTGCGGGGACCAGNCAGGGGNCGNCCCCGACANAANCAGGGCNCGC
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CCGCNCNAGAACNAGNGGANCCCCCGGGCNGCAGGAANNCGANANCAAGCNGANCGANAC
CGNCGACCNNGAGGGGGGGC
Sequence 862
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ATTACAGGCGTGAGCCACCGCACCCGGCCCAGTCTTCATATTTATAAATAAAGTCTTGTG
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TGAAAGTCTTTAAGACAAAGATCAGGTGGCTTGCAAAACCTAAAACGTCTGGTCTTTTAC
CTAAAAAGTTTGCCAACCCCAAAACAAGAATATATTCGATTGTAATCTTTACAAAGGTGT
TGGCTATATTTCAGTGTGT
Sequence 863
NCTATAGGGCNAATTGNAGCTCCCCGCGGTGGCGGCCGAGGACAAATTCAGTCCCAATAC
TCAATACGTATTATAGATGACTATGAGTGCAAACCTTAGGATGNGATTNTCTGAATAATN
GNTCTTTGTAGGATTTGGTTACATTATTTAAAATGAAAAGATCTAGTTTTAGTGTGAGC
TCAGTAATGNTAATNGGTTAAGTTCATTGCGAATCTTGAGTTTTAGATAAGTAGTTATTT
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ATGGCTGACAGTGCCAGATATACTTAGGGATAAACATCAAAATGCAATTATAGTTGCTAT
AACGTTAGATACTCGGAATCAAAATTTATTTGCANGCTGACTTGATAAACTAAATGAA
Sequence 864

TABLE 1
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TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAAGAGTCAGCAG
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ATATCCCTGCCTGGGATGATGATGGCTCTAATTGAAGCTCTGGCATCATCTGGGGCTTTA
TGAGCCAAGGGAGATAAGAAGAGCCACAGCAAAACCCTTGGGTCTACAGTGCAGGCTGCA
ACCAAGGCAGCATTTGCTAGAATATTTGTGATTATGTGTTCAACCTACAACCT
Sequence 865
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCATATTAT
ACCTTTTTATTGTTGTTATAATTATTATGGGGTATTTCTAATTAATATGATGTTGAAACC
TGTTTGGCACCTTCTGGAAGCTACCAAAAAAATGACACTCCATTGAAGTGCTTAAAAGCT
GTTCTCATAAGAATTCTACTGGCCTATTGTAAAAAAAGAAAAAAAAAAAAGAAAAAGAAG
AAAGACACAAAGAAAATAATCTAAACACCAAAAACTAAACACAATTCCAATCCTTTTTCT
GTACCT
Sequence 866
ACTTAGGGCNATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACACGGAAATCTGGACAGTG
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TGAAACCTTTTAAGGATGCCAAGAATGCATTATTCCACAAAAAAACAGCAGACCAACATA
TAGAGTGTTTAAAATAGCATTTCTGGGCAAATTCAAACTCTTGTGGTTCTAGGACTCACA
TCTGTTTCAGTTTTTCCTCAGTTGTATATTGACCAGTGTTCTTTATTGCAAAAACATATA
CCCGATTTAGCAGTGTCAGCGTATTTTTTCTTCTCATCCTGGAGCGTATTCAAGATCTTC
CCAATACAAGAAAATTAATAAAAAATTTATATATAGGCAGCAGCAAAAGAGCCATGTTCA
AAATAAGTCATTATGGGCTCAAATAGAAAGAAGACTTTTAAGTT
Sequence 867
CCGCGGTGGCGGCCGAGGTACATAACATGATATCAAGGAAATGCTTGAAACAAACTTTCA
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GTGTGTAGGGGGAAAGAGGGAAAGCACTTGCAGTGTGACTTTATGTGGTCTTTCCCCAAG
TATTGCTACGTTTTGACCTTTGGCCCAACTGAACAGGTGAAATGCCCTTCACATAAGTTT
CAATCCCCAAGAAACTAGCTGGAATGCAGGGGACTGTAGACACACTCCTGGACCAAATGG
CATCGACTCTCAGAATCCAAAATGGGCCCTGCCCTCATTCTGAGCTTACGGCCCCAAGCA
TATTCTAAACAAAGCTTTTTTAA
Sequence 868
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CTGAATTATTAATGAATGCCCAGGAAGTAATTTTCTTCTCATTCTTCTAAAACTACTGCC
TTTCAAAGNGCACACACACCGCGTNCACATACACTGCATTCGTTGCTCCAGTATAAATTA
CATGCATGAGCACCTTTCTGGCTTTTAAGCCAATATAATGGGCTGCAAAATGAAGACACC
ANAGTGTATGCATACAAATCTCACTGTATTAAAGATGCAGGTTTTCTAATTGTACCT
Sequence 869
GCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTGGCGACGCGCGGGACAAAG
GGAAGCGAAGCCGGAGCTGCGGGCGCTTTTTCTGCCCGCGGTGTCTCAGATTCATTCTTA
AGGAACTGAGAACTTAATCTTCCAAAATGTCAAAAAGACCATCTTATGCCCCACCTNCCA
CCCCAGCTCCTGCANCACAAATGCCCAGCACACCANGGTTTGTGGGATACAATCCATACA
GTCATNTNGCCTACAACAACTACAGGCTGGGAGGGAACCCGGGCACCAACAGCCGGGTCA
CGGCATCCTCTGGTATCACGATTCCAAAACCCCCAAAGCCACCAGATAAGCCGCTGATGC
CCTACATGAGGTACCT
Sequence 870
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TAAAACACACGGAAATGTATTTTCCTGGCTGCAGCACCNGCCATCTTGCCTCGGNAGGAC
TCATTTTNAAAAACAGCAGCTTCTTGAAGCCCCANAACGCATTCCTGTGCTACGG
Sequence 871
CCGGGCACGGTACAGAGCCCAAGACAAAAGATAGGCCTGTGAGGATAACATCTGGTATAT
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TABLE 1
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GCTTTGCCCTGCAGCTGTTGGCCTAGGTGCTGCGGTCATACATATGCCCTNAGGCCTTTC
CATGGCTACCTACCTAGAACCCAGATTCTTTTTTTTTTTTTTTTGAGACGGAGTCTCGCTCTG
TCCCCCANGCTGGAGTGCAGNGGCGCCATNTNAGCTNACTTGCAAGCTNCGNCTTCCGGG
T
Sequence 872
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GAAATTCCTCATAGATGGTAACTCTGTCTACTCTCCGAGCCAGTGGCGAGAAGTTACACA
GGGAGTCCACCCCGGTGTGGTGCCTGCTTGNGGACAGACCTGAATGTTGAAACTTGACAG
TCAGAAAAATAACTCTTGATGCTGCTGTTTCGGAAGAGTTGGTTGAGCGCATCCTCAATA
TTCCTTTTGTTCCTCTGGNAATTGGTGGTGCCTGGCTGGGCTTTGTCCTGGGAATATGGT
AGGTTGGTGATGGTAGAAATTCAGGTACGAAGTGCTGGGTGCTGGAGCTGCTTGTTGGTT
GATGAACTGATGACTCC
Sequence 873
ACTACTTAGGGCGAATTGGAGCTCNCCGCGGTGGCCGCCCGGGCAGGTACAATGCTCACT
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GAAAACTTCAGAAAGGTATTGGTGGGGGATGTTGCGGGGGGGACAGGGGACAGCGAGGATG
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AGACTCAGGCTGATGGGGTATCTGTAATAAATCAAACATAATATAACAGCACGTCAAGTG
ATAAGGGGACTCTGGAAAAACAAGCAGCAAAAGGAGCAGTATCAAACTCCACAGAAATTC
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Sequence 874
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CCTCCTGGACCCTTGNGGATCCTGCCCACCCTTGGGCCTNCCAAAAATGCTGGGGATTAT
AAGGNGGGGAGCCACTGTGCCCGGGCCAACAATAAATTTTTTTAAGGGTTAGTCAAACCT
AACAACAAAANTTTAAAAGGTCAATCAGTAGTTCTAACTTTTTTTTTTTT
Sequence 875
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CCGGCCGGTGCCAACCTGTGAACTTCCCACCATATCCCAGAATCTGCTATTCCCCAAACC
ACTTCCCAGTTTCCTTTCAGTAATCTTTCTGAAGGAGCCAGGACAATAGGGCCTGTTGTT
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Sequence 876
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GATGTAGAGCTATTGGGAAAGAACTTCCAAACTCAGGAAGTTTGCAGAGAGCAGACAGCT
AGAGATAACTCGGGA
Sequence 877
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAAGTCTTA
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TABLE 1
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TTCTATGAGCTAAGGTTTTTCTGAGCTAAGGTCAAGCGGTGACTTAGCAAGTTGAACGTG
TAATGAACCAAACCTGTTTTTCCATGGAACCAATAATAATTAATCTAGAGTGAGCCATTT
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GGGGGGGCAGTGAGAGCAAGCTGTTTTATTGTGAGAGTAGCAGGCAGGCTGAATGAGAAG
GGGTAGCTGTT
Sequence 878
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AGAAGTTACACAGGGAGTCCACCCCGGTGTGGGTGCCTGTTGGGGACAGACCTGAATGTT
GAAACTTGACAGTCAGAAAAATAACTCTTGATGCTGCTGTTTCGGAAGAGTTGGTTGAGC
GCATCCTCAATATTCCTTTTGTTCCTCTGGTAATTGGTGGTGCCTGGCTGGGCTTTGTCC
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TACCTCGGCCGCTCTAGAACTAGTG
Sequence 879
CTNCTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTT
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CTGATTTTCATGTTTAGAAAAAGAAATCACATTAAAAATATGCTTTTTTAAAATTTTGAG
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ATTTAAANATTCTTTTTTTT
Sequence 880
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CCTCGGCCTCCCAAAATGCATCTCTGGTCTTTAAATGCCCTTTGCTGTATATTCTATAAC
ATCAAGTCTCAGATCTGGTTTGACCTCAGTTGGCCTCTTAATAGTTTTCCCCTATGAACA
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CATCGTCCCATG
Sequence 881
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCACACTGGTAAAGAGTGGCAAGGTAGC
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GACCAG
Sequence 882
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AATAGACCAATTCTCAATTGGTAGAGGAACTTTGAACTGGAAAGGAACCCTAAAGAAATC
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Sequence 883
CCGCGGTGGCGGCCGCCCGGGCAGGTACTATAATTATAATGATTTCAGATAGAACATGCA

TABLE 1
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GTGGTTATGGGAACTACCAATGGGTTCCTACAAT
Sequence 884

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AAATGTATTAAACTTATCAGTAACATAAAAACTTATTTTGTTTCACCTAACGAATACTGC
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AGCTCTAAGAAAGAAGCAAATTATCACTGAACATATTTCTTATTATTTCTGGCTTTGAAT
TAATACGTAACTTAAATTGGCTTAAATGATCCAGAATATTGGAGGAATATGATACTTTCA
CATAATATACTATGAACCTGTTCATATAACTCTGGATTGGCTACCTAACCTTCTGNTTTA
ATG
Sequence 885

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CCAGTCAATAACTGAGAAATCAAAATAAAATAATAATTTCAAAGAATTACATAAATACAG
GGCCTTTTGAGATTTTTGGCAATTGTAAACAAAAACGAATGGTTTTTACAATTCAGTGTA
ATTCTACGAATATTTATTTGGCACCCATGTTAGGCACTGAGGCTACACAGCAGTGAAATA
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AATTTTATGGGCGGTTGGGGACAAGGAAGAGGTATAATGCTATTTTTTTTTCCTTTTTCTTT
TTT
Sequence 886

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AAGCTGTTCTCANAGTGCGGCTGAGCGAGGAGCTACAGGGGAATGGNGGGGGGCCAAGCTG
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AGAATCACACCCTGCATCCAAACGGCAGCAACCCCAAAA
Sequence 887

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CTGTAAGCCCTTCTNTTGGCCAAGGAAGAAAGGAAGAAAGAAAAAAGAAACCCAGGGGCC
TGTATCCCCTGATTAAACACAGCACAGCACTCCAGGCAGACATGCCCGGNGGCGGCTCCT
TTGCACCATTGACCTCAGGCCAGACACCTCAGCGCCAACAATGGGACCTCGGCCTTCCGG
CTAGGTTTGCCCCAGGCTGGGCAGGAAACCAGCTCGGCCGCTNTAGAACTAGGTG
Sequence 888

CCGCGGTGGCGGCCGCCCGGGCAGGTACGCGGGGAGAGACATTGTGGCTAGCCAACCACA
TGGTCAGCCTCAAAGTTGAGAGGCTCAGTAACCCTCCTATCCCTAGAGAATTCCAAAGTG
TGGATGTAATTTAACCTAGGAAAGCCATTGGTGACTATCTGTGATCCTCTGGAAAGTATG
CTATGTTGGGGTATATCTTTGCATCCAAAGCCAGAGGGGAACCACAATGGCCTAGTAAAA
CCGGTGGGTCCTCAAATGCCCACTTAAGCCTCTGGCCTNTTGGAANTTTGACCCATAGTG
GGCCGTTCAGCTTGATTAGAGCCGGGGAAAGAAAGAAAATATTGNCATTTTTTTTTNTTGA
AAAAAAATTT
Sequence 889

TABLE 1
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CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCTGGATCTATGCTGC
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AAAGGTCCCTTGGGTGGGTGCTAATGAGCAGGGGCCCAGGAAAACCTCTGTCTTCCCGGA
GAGCCCTCTTGCATGAGTTTCGGCTTTGCCAAGATTCCAGGGACTTGAGGACAGCTATTG
AGTTATGGTTACGTGACTGCCACATTGGGGCTTGGAGGCATCTGGCAGATGGTTGGGAAT
GGGCTGGCACCACACTAATTAGGCCACGATGATCCAGTTTGACTCAGGGAAACCCAGAAG
TCATAGTNCTCTTTGCAGAATGACACAAGGATGTCAACATGCTTTGNTTGTGTACCTCGG
CCCGCTCTAGAACTAAGTGGGATCC
Sequence 890
CCGCGGTGGCGGCCGAGGTGCATATATATATATACACACACATATATATATTTATGTATC
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TTGCACAGGTCTGTTAGGGTAAGATATGTTCCTACCTTGAGAAATGTTGTGAATATCTAG
CGAAACACCAAACATCCTCAGCTGACTAATGTGGTATCAGACTTTCTGGTTGCAAGGTAG
GGGTGAATAAGGCAGGATGGGGTGCGGGGGTGGTGCTGGAAGAAGACATGGCATCAGGTT
GGGTTTTGCAGGATACTGAAATTGTCTAGGGGCCTTGGCTGTGCAAAGAGCCTTTCCGTC

Sequence 891
ACTTAGGGCAATTGGAGCTCCCCGCGGTGGCGGCCGCGCGGGCAGGTACGCGGGATTTCT
CAGATAGTTATGCGCAGCTCCAGGCACCAGATTCTGTGCTGGGTGCAGGCAGGACCTGGA
GGGCGTCCTCAAGTGTTGATCTGCAGGGACTGTCTTGATCTTTCCAGCAGTGTCATTGTG
GGCACGTGACCTGAGCTTTCTGAGCCTATTTCCGCATCTGTAAAGTGCTATCCACTTCCA
CCTCCTGGGCTGTCGTGCAGATGTAGGAAGGAATTGCACTCACACACTCAGCATGAGACA
GGCGCTCAGTAAAAGCCCGTCCAGGGGATATGAGATCAGTGAGGGATAGGAAAGCAAGGG
TGGGTAGAAACAGCAAAACCCTTTCCCA
Sequence 892
CTACTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGNCAGGTACCAAGCATTG
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GCAAAGCTGGGAGGAAGTTGTATGAAGGAGCCTGAAGACAATGGGGAGCTAGGGGAAAGT
TCTGAGTAGAAAGGAACATGTGGACAAAGGTTTGAAATGATGAAGACTGATTAGGAAGTT
CATATTATGAAGCATAATTCAAGCTTTCTCTACGATGTTCAAATCCCATCTCTCCTACTT
ACTAGANAGGTGACATTGGGCCAAGTTACTTATCTCCTCTGCTCCTGTTTATTTGTGTTC
AAAAACAGGGACCTCTCTCACAGTGTGATTNTGAAGACTGGACAAGAAAATGGGAGGTTT
TG
Sequence 893
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACACAGTTTGGAAGTTT
AGGCAAAAGTCATTTCTTCCCTATATTTTGTCATGCTTATCTCCTGTCTCTTTCTGTTTT
ACAGATTAGCAATAAACTCCTTAAAACCCAAAAGGTTTGGGCTTCTGTTCCTTTCACTTG
CAGTCAGACATGGAGTTAGTGGTAGAAGAAACAGAAGGGGTAACCTGCATGGTGACAGCT
ACTGAGGGGATGGATAGGAAAGCAGGCTGAGTCCCTGGGGCCAGTGGTTACCAAAGCCAA
GGAGAGGGCAAGGGGAGCCCAGTGGGCCTGG
Sequence 894
CTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCGGGCAGGTACATCACCCTGCTGA
GGGACATCCAGGACAAGGTCACCACACTCTACAAAGGCAGTCAACTACACGACACATTCC
GCTTCTGCCTGGTCACCAACTTGACGATGGACTCCGTGTTGGTCACTGTCAAGGCATTGT
TCTCCTCCAATTTGGACCCCAGCCTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATG
CCTCATTCCATTGGCTGGGCTCCACCTACCAGTTGGTGGACATCCATGTGACAGAAATGG
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AGGAACAAAAGGAATATTGAGGGATGCGCTCAACCAACTNTT
Sequence 895
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAAGGAGTAGTCTAAAACAA

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GTGACTTTACTACTTATTCTTCTGCATGTCCTTACCAGCTTCTTACCTTCTTCAGGTTGA
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TTTTTCTTTTTCATTTTTAAAAAATAATTTTT
Sequence 896
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAGTTCATATCCCAGTTCTA
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Sequence 897
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Sequence 898
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Sequence 899
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GGCCCAGAGCTGCAGACGCTAGAGGGGTA
Sequence 900
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GCCATTTGAATGCTGGCAGGTNGGAAGAAAAGAGGAGGACAAAGAACCCCAAAAGTTTGG
CATCATAACTACTGCCACAAG
Sequence 901
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CCTGGCCTTTCCAGGGTATTCTTTTAACGTGGTCTTATTTGCCTTTTTGAATTTAAGAAA
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TATACATGAATCTACTTAGGCCTAATAACCAAGCAGTCCTCAGTGGCAGATCAATGAAAA
GTGAAACTAAAGGCAAGTGAAGGGTAGGAGAGATTGGCCAGT
Sequence 902
GGCAGGTACCCACCTCCTCGGTCACCCACAGAGCCACCAAAGATTCCATGTCCCAGAGCT

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TCCCATAGCAGACCTGAAAAGTCCATGACCTGAGCTTTGGCCATGGTAGTGGAGTGGAAC
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AGACCTGGACTCTGCCTTTTTGGGAAAAGGAACCAAGCTCATAGCAATTTGGCTGATNAC
ACAATCAGATTTTTCCAGGTTAAGCTTCCTTTCTG
Sequence 903
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GGACAATCTTTTCTGCCAAGGGCCTATTTGAGTGGAGCACCCCCACACGGGTTAGACGGG
TCGGCACGGGGCTGGTGGGTGAGGAACTCAGGGGTCAGTGCAAGCTGCAGACCCTCATTT
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Sequence 904
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GAAGAGAAGCCATTGCCCTTCAAGAGCCACCCTCATTTCCTGGGCACTGGTTTGGAAAAA
ACGAAGAAAAAGAGACACCCAGCTCACCTCCA
Sequence 905
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GTGGAGGCCAGGTGGCAAGANACTGCNNGCCAATGTCAATGAAAAGCCTGGGAGGAAAAA
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Sequence 906
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Sequence 907
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AGGCCTGTGGATTGGCATC
Sequence 908
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AAAAATGTAGATGGCACCACGGAAGAGATAGTAGGCCACAGTGTTACTGGCTTCCCATA
Sequence 909
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GAAATTAAAAAGAGACTAAGAATATTACAAACAACTTTATTTCATTTAGATGAAATGGAC
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CTGTATTTATTAAAGATACTGAATCTATAATTAAAAATATCTTCACACAGAAAATTACAG
TTTCAAATG
Sequence 910
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Sequence 911
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GTGGCATGATCTCGGCTCACTGCAACCTCCACCTCCCAGGTTCCAGCAACTCTCCTGCCT
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Sequence 912
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TGCACTGCTTATA
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CCACTTTTGTCCTTA
Sequence 914
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Sequence 915
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Sequence 916
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AAGAAGAAAGAATTGAAACCGCACAGCAGTTTTTTTCTCATGGTTTGCAAAGCTGCAAACT
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Sequence 917
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GTAGGGAATTTATAAGTCAGCCATGACAATTATACACCACAGGCATTGTATTATCATTGC
CAATGTCAAGAAAAAGAGCTAAATTTACCAAGCCATGGTTGGNTTTTTACTAAATACCAT
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TGNCAATACTCTAACAGCTTTAGTATTGACTTTAGAATATATCTGATGCCCACAAAAATT
AAATAAAAGGGNTTNGAGGAGGTTTGCCCNAAATAAGTGNGGGGCCCGGAGGGGAA
Sequence 918
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GTCCCAGACAGTAACTTTGGTGTAAATGCTTCCTGTTTTTCTGCCACAAGCCCTTTGGTC
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TGGGAAAT
Sequence 919
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AGCTTGGAA
Sequence 920
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AGGGAGCAGGTGGCTTTGTGGGCCTGATGTCCAAGAAAGAAGTNCTGGTGGTAAACAGAG
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Sequence 921
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Sequence 922
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Sequence 923
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GGTGGCAAGCGT
Sequence 924
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Sequence 925
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Sequence 926
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Sequence 927
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Sequence 928
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AGCCCTCTTGCCTGCCCCGGAGCTGTCCCGGGCTAGCCGAGAAGAGAGCGGCCGGCAAGT
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GGAAGTTA
Sequence 929
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GGCCTGCTGCCGATTCCTGCCCCTGCAGTCACAGTGCCCTGAGGGGGCAGGGGACGCGGT
GATGTACGCCTCCACTGAGTGCAAGGCGGAGGTGACGCCCTCCCAGCATGGCAACCGCAC
CTTCAGCTACACCCTGNAGGGATCATACCAAGCAGGCCTTTGG
Sequence 930
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CTTTTTACACTGGTTTTTGGTAC
Sequence 931
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CTACCCGCGTGCCCCAC
Sequence 932
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Sequence 933
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GTTCTTTCGGCCGTTCACGTCATTGTGTGCACCTCAGCTGAAAGTTCGTGCTACTTCTGT
GGCCTCTCGTGGCTGGCGGCAGGTGGGGTGATGGTGCTGGCCTCGGCGCTGCTGTGTGTG
ATTGTGTCTGTTCTGACCAACGTGCTCGTGGGTGGAAACACCCCAAGGAAGAACCCCATG

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CATCCCAGCTCAAGGTGGTCAGAGCTAGACCTTCTTATTCTGTTGGGGACGGCGGGCCAC
GTCTTGAGCCTGGGCGCCAGCAGCTTCGTGGAGGAGGAGCACCAGACCTGGTACTTCCTT
GTGAACACCCTGTGTCTAGCTCTGAGCCAAGAAACCTACAGAAACTACTTT
Sequence 934
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AGGTAGAGGGAACACCATGAACCAGGGCATGAAACTGAAAGTGCATAACATATTCTAGAG
AGAGAAGGGTGTGGGCATGAGTTAGGGCTGGAAAAACAGGTTGGAAACAGATAAGTAAGG⁻
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ATTTAAATTGTGTGAGACCAAAGCATAGAGACTAGATAAGAGGGCGATCATTATTTCAAA
AAGAAATAATGAAGATCCAATGAAGGAAGTGGGAAATTAAAATAGGGGAAGAGAGGTA
Sequence 935
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Sequence 936
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NGGGTGTCTGCATTGCTGATGGC
Sequence 937
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GGAGATCACACA
Sequence 938
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GATCAAGCTGTGNAAGAGTACAAGAAAATC
Sequence 939
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CCATGGGGGGAGTGACGCGCCTGCACCCGCTGTTCCGCGGCAGCGGCGAGACATGAGGAGA
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Sequence 940
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Sequence 943
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Sequence 944
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CCTCGTTCTCCAACGGCTGCTACGAGGGCAAGCCTTCTCAGAGGAAGCCCAAGCATTAGG
AAGCCCGCAGGC
Sequence 945
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Sequence 946
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A
Sequence 949
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AAGNTTTGGGGAAGGGTTACCCTTCNGGGGGGAAANGCTTAACCCAATTTTTC
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TTTCTTCTGGGAAAAC
Sequence 951
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Sequence 952
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Sequence 953
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Sequence 954
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Sequence 955
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GGAGGAGTGAAGACCATTGAAGCC
Sequence 956
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Sequence 957
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Sequence 958
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Sequence 960
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Sequence 961
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Sequence 962
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Sequence 963
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GCANCCAGGCGGC
Sequence 964
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Sequence 965
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Sequence 966
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TTTTTAAA

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Sequence 967
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AGACAGAGGGCCCGGCTGTTGAAGGACCAGCTCTCCCTGGGAAATGCTGCACTTCAGATC
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Sequence 968
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CAGCATCCCCACCTTTGAGCTGCTGCAACCGCCCTGGACCTTCTGGTAGAAGAGTTTGTC
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Sequence 969
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AGTCCATTTTTTCGAGGGG
Sequence 970
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Sequence 971
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CCGCCTGGAGGGGGCCAAACCCCCA
Sequence 972
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GGGGAACCTCTGTCTTCAGGTCACCCCTTTTCAGGGGCCTGG
Sequence 973
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Sequence 974
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Sequence 975
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GCTGCATTG
Sequence 976
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Sequence 978
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GGACCCGCCGCCCCATGGCCCAGGCGTCTCGCTCAGGTAGCCTGCCTCCACTCGTTATCG
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Sequence 979
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Sequence 980
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Sequence 981
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Sequence 982
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GGCTGTGTGTGGCACCCAAA
Sequence 983
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CTGCAGTGGGGATTTATTTTTT
Sequence 984
CACGCGTCCGGAGTACGGAGTTGTTCCTTTACTGGCTGAAAGATATATTCGAATTGTAAA
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AATTTTTTGGTTTTTTTACCT
Sequence 985
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Sequence 987
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Sequence 988
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TTGGACTCAAGAAGACCAAAATTTACAGGAGCTAATGGCAGCATTAGCCCGCTGTTGGGC
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Sequence 989
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Sequence 990
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CCGCAGGCC
Sequence 991
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Sequence 992
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Sequence 993
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Sequence 995

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ATTGCAACATGCTTGGAAT
Sequence 996
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Sequence 997
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Sequence 998
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Sequence 1001
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Sequence 1002
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Sequence 1003
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AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAGG
Sequence 1004
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Sequence 1005
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CACCAGTGG
Sequence 1006
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CCCCGGGACCCCCTTCCG
Sequence 1007
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Sequence 1008
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Sequence 1009
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Sequence 1010
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Sequence 1011
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Sequence 1012
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AGG
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Sequence 1025
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Sequence 1027
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Sequence 1028
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Sequence 1029
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Sequence 1031
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Sequence 1034
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Sequence 1036
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CTGAAGAAACAGGCTCTTGCAGTTGACCCAAGTGATGAAATAAAGAGAGCCAGTGGGAGA
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Sequence 1039
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CATATGGTAGGATGGGTAAAATTTGGCAATACTATCCAGGAAGTCACTAAGTACAGATGA
ACTGATTTAGTCCTAATTCCAAGAAGTGTGATTCCACCTACTTGACTAGAAATTTATACC

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TGGTAATAACTCCTTGTCCTTGAAGATTTTCAACTAAGGAAAACTGTTTTTCAGCAGGAC
CTGATTATGCACTGCTATCTAGGTAGGGTCACTTATGGTTTTATAATATATTTAATTGGA
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AAGGATAATATCTTAGGAAATCACATTATGGTATTAA
Sequence 1040
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ACATTACCTGGGTGATCTCATTCTCTGCCATGACTTCACTTGCCATATATGTGCTGATTT
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CAGGAAGAAATATTATTGAGTTTTTAAAAACTC
Sequence 1041
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Sequence 1042
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GGCCTNC
Sequence 1043
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TTA
Sequence 1044
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CCCAGAGGGTGGGCGCGGGGCTGCCTCTACCGGCTGGCGGCTGTAACTCAGCGACCTTGG

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CCCGAAGGCTCTAGCAAGGACCCACCGACCCCAGCCGCGGCGGCCGGACTTTGCCCGGTG
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CCCT
Sequence 1045
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G
Sequence 1046
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TTTGCTTGGGAGAACTTCCTTGNCTTNCCTTCAGGAATTCCNGAGCCTGGATTCCCAGCG
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Sequence 1047
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TCTGGCAAGCGGG
Sequence 1048
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CGCCAGGCGCTGNCGCCGTGTGCCNTCCGCCGNTCGCCCGCGCGCCCGCGCTNCCCGCCT
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TGGCCGACCTGCTGNTGGCCGCCGGGCCCGGGCCGAGCCTGGG
Sequence 1049
NCCACGCGTCCGCAAGGCGCTACGTTTATTGCCTCGTCTTATTCACTGACCTTTGTAATG
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TAATGCCTATGCATTTACTCTTTCCTGATTTAGGCAGAGGTGGCATTTTCTTTATTGCAT
TTCTCTATTTTTTTTAATGTACCCTACCTTCAGTATTCTCTTTGTAAGTTGGTGACTTGCA
TCTGTGGCCTTGAATATTTTATTATCACATGTGGCATAACAGTATCCACACTTTTTAGTT

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CTTTATTTTTTTTTTTTTTATTTTTGAGCAATTCTCCTGCCTCAGCCTCCCAAATAGCTGGG
ATTACAGGGTGCATGCCACCACACCCAGCTAATT
Sequence 1050
CGCCCCGCGTCCGGGATGGACAAGACAAATCTCTTGTAAAAAAAATTACAAGTAATTTTT
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TAGGGAANAAGTGCATTTTGGTAGGAGCCATCAAAAATAGCTTCTTGATATTTCATTAAA
AG
Sequence 1051
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Sequence 1052
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Sequence 1053
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Sequence 1054
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NAAAAAAAAAAAAAAAAAAAAAAANAAAAANNNANAAAAANNAANAAANAAAANNAAAAANGG
GGNnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
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GGTTGG

Sequence 1055
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TGAATTTTAAGGGTCTG

Sequence 1056
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Sequence 1057
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Sequence 1058
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Sequence 1059
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Sequence 1060
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TTATGCAAATTAGACCTAA
Sequence 1061
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Sequence 1062
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Sequence 1063
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TGGGCTTGGGGA
Sequence 1065
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TTCTTGTCGTCATCGTCCTTCTTCAAGCTTGGCCAGCAACGAGAACGCCACAAGGAAACT
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Sequence 1066
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Sequence 1067
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Sequence 1068
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Sequence 1069
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Sequence 1070
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Sequence 1071
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GACCCACAGTGCCAAATATGGCCCTGGAACAGGCCGCATCTGGCTGGACAACTTGAGCTG
CAGTGGGACCGAGCAGAGTGTGACTGAATGTGCCTCCCGGGGC
Sequence 1072
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AACTTGGGAGG
Sequence 1073
CGCGTCCGCTGAGTTCNAGGATGGTTTTTTTCTTGGGACCAGACATGAACAAAAGTTGACC
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GGGGCAGCACTGCTGTCCAGCTCTTCATCCTAACAGTGGTGACAGTTTGGCCTGCTGGCC
CCCCTGGCCTGTCACCGACTTCTACACTCTTACTTCTATCTGCGCCATTGGCATCTGAAC
CAAATGAGCCAAGAGTTCCTGCAGCAAAGCTTGAAAGAGGGTGAGGCTGCCCTCCACTAT
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CCCTGGCTGGTGATCACCATCATCACTGTGGACAGGCAGCCTG
Sequence 1074
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Sequence 1075
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CA
Sequence 1076
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GAGACAGCTAAGAAGAAAACAAAGAAATAAAGCAGTTACAAATTGTGATAAAGTGCTTTT
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ACCTGACCTCTTTGAAGGATCAGAAAATACTTCCCTGAAGGACTGACATTTGAGCCTAGA
CCTGAAGGGTGAGCCATCAAGCTAAGACAATTGGGGAAGAGCATTCCANGGAGAGGGAG
Sequence 1077
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GTTTCCTTTGTTAATAGAGTCACTTTTATAGTACTGNGCTTGAGGNNATATACAGAGTAT
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Sequence 1078
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Sequence 1079
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Sequence 1081
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ATTNCTAA
Sequence 1082
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Sequence 1083
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Sequence 1084
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Sequence 1088
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TTGTTGGCGTCGCTCCCGAAGCCGGG
Sequence 1089
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AAAAAAAAAAA
Sequence 1090
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Sequence 1091
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Sequence 1093
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AAGTTCAGTCAAAGAGTATCAAAAAATTATGTTTCAGCTAGACTGGTGTAATGTATAAGT
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Sequence 1094
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AAAAAAAAAAAAAAAAAAAAA
Sequence 1095
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Sequence 1096
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Sequence 1097
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Sequence 1098
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Sequence 1099
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Sequence 1100
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TTC
Sequence 1101
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TCTCTACCCTTCC
Sequence 1102
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Sequence 1103
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Sequence 1104
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NTTTGGTTTGGT
Sequence 1105
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Sequence 1106
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AAGATCCGTTTATTGAGATGATTTTGAAATGCTCCTTTACCATTCATAATTTAAAAATAA
AGTTTAACAATGGTTTAAATTCANAATGGATTAAAATGGAGTTGGGGGTGGAAAGTAGAG
CCATTCTTAGTAAATATAAATAACTGAAAAGTTCTTCTGAGGAGACTATGTACCGAAGTT
ATCATTGCATCTTTCAGTATAGGCAGATCTCTCCCTCATATAACCGGATGTTTCTTGGCG
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TTCTTAAAACCTAGAGTTAAAAGCTGTTGCGTGTTTGTTGTGTTATTTTAGACCAATCAA
CTTCATAGGCTAGACTAGTCTAGA
Sequence 1107
ACGCGTCCGAAAATTCACAGGGTGTGTTGGCACACGCCTGTAATGCCAGCTACTCAGGTG
GCTGAGGCATAAGAATTGCTTGAGCCTGGGAGGCAGAGATTGCACTGAGCCGAGATCGCG
CCACTATACTCCAGCCTGGGCAACANACATCCTGTCTCAAATAAATTAAATTACATTAAA
TGTTTAAGAAGAAGTCTAAATAAGATTCATATGCTGCCCTCCCTCAGATAATGAGGGAAC
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CTTCCTTGAGGGACGGNCAGGATTTGGCCAGATGGAAAGGCAAGTGGAAGGCTTTGCAGG
GACAAGCAATGTAANCAGANCCTAGAAATGG
Sequence 1108
TCGACCCCGCGTCCGGNGTAATTCTAGGGGAAATNATATTTCTGAACAACAATGTTGGTT
TGTGCAGGAAAATCACCAAAGAACATGACTAGAAAGTGTATAGCTACAGTTTCCCTCTTT
TAAATGGGAATAGCAAAACATATAAAGAATATTGATAGGCCGGGTGCGGTGGCTCACGCC
TGTAATCCCAGCACTTTGGGAGGCCGAGGCGGGCAGATCAAGAGGTCAGGAGATCGAGAC
CATCATGGCTAACACGGTGAAACCCCGTCTCTACTAAAAAATACAAAAAATTAGCCGGGC
GTGGTGGTGGGCGCCTGTAGTCCCAGCTACTCGGGAGGCTGAGGCAGGAGAATGGCGTGA
ATCCGGGAGGTGGAGCTTGCAGTGAGCCGAGATCGCGCCACTGCACTCCAGCCTGGGTGA
CAGAGCGAGAGACTCTGCCTCAAACAAAAAAAAAAGNNAAAANAAAAAA
Sequence 1109
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AGAGGGAGACTCAAGAACACCTCTAAGATTTTTTACCCTGATCAATGGGATAGGTGAAAGT
ACATTAATGGAGATTGAGAATCCTGGTGGAGGTACAAGTTTAGGGGTACTGAAGAGTGCT
TTTGGACATGTGAATTCTTAGAAGCCTACTAGATTCTCCAAATGGAGACATAAAACATAA
TTGAATACAAAAGTCAGGAGTTCAGGAGAGGGCTGAGCTAAAGATACAAATTTGATAGAC
ATGAGCATTTAAAAAAAAACTGCATGAAAATACTAAAGATAGGCTGTCCTGCCTATGGAAT

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AGCCATTCTTTGATCCCTTTACTTTCTTAATAAACTTGGTTTCACCTTACTCTATGGACT
TCCCCCAAATTCTTTCTTGTGTGAGGTCCAAAAACTCTCTGTTGGGGTCTAGATCAGACC
CTTTTCAAGTACATCTTNCTGATGAACCACAAANGGATTATACTAAAGAGACCCCCCACC

Sequence 1110
CCGGNAATTTGCTTATTCTAATTGAGACACANTGGTGGGGAGTGGGGGTCGGGGACTACA
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ATCCCCTTTTCATTCCTCTAATTCTATGACAATTTTTTTAAAAAACCAAACACAACCAAA
ATAAGAGTGGACAGTTGAGAATTACCTTTAGGTTCCCATGACCCTGAAGACTGTATTTGG
CCTTGGATCCATTAAAAAAAAAAAAAAAAAAAAAAAAA
Sequence 1111
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GAGAGTGTAGAGCTGACACAGCAACTGCTGCGGCAACCACAAGAGGGATCGGGCCTGGGA
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Sequence 1112
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CCCCTGNNCTCNANCCCTGGCAACCANTGNNGACACCNNCTTAAAAAAAAAA
Sequence 1113
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Sequence 1114
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TTTTGTATTTCTGTAAAGTTGGTAGTAATGGCTCTGCTTTCATTTATTATTTTAATAATT
AGTCTTCCATCTTTTGCTCAGTCAATATAGTGAAAGGCTTGATCTTTCAAATAATCTATG
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Sequence 1115
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Sequence 1116
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Sequence 1117
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Sequence 1118
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TAAAGAAAAAAAGA
Sequence 1119
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Sequence 1120
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Sequence 1121
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Sequence 1122
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Sequence 1123
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Sequence 1124
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Sequence 1125
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Sequence 1126
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GCTT
Sequence 1127
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TTTTTNGG
Sequence 1129
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TGGTTCTATATTTATATAAAAG
Sequence 1130
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Sequence 1131
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Sequence 1132
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Sequence 1133
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CGGC
Sequence 1134
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Sequence 1135
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CAAAAAANNGCCAAAACGCGACNANCAAAAAAANGGAGCAGANGCNGAGGCANNGCAAGNC
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Sequence 1136
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Sequence 1137
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Sequence 1138
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Sequence 1139
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Sequence 1146
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Sequence 1152
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Sequence 1153
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Sequence 1158
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Sequence 1174
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CCTGCCCG
Sequence 1175
AGGTACCGCTGTGTCCGGGTGGGTGGTCAGAATGCCGTGCTNNAGGTGTTCACAGCTGCT
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CAACTGGGTTTCCCAAGCTATGTGAGTTCAGATAACCTCAGAGTGAGCTCGCTGGAGGGG
CAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTCTTGCCAGATGACAAGGTGACTGCA
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GGCTCTGTCATCACGCCCCTGTGGATCGTCACTGNTGCACACTGTGTTTATGACTTGTAC
CTGCCCG
Sequence 1176
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Sequence 1177
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Sequence 1178
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Sequence 1179
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Sequence 1180
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Sequence 1181
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CTCCACCAAGTTGGTATTCAAAATATGTAATGACTGGTATGGCAAAAGATTGGACTAAGA
CACTGGCCATACCACTGGACAGGGTTTATGTTAACACCTGAATTGCTGGGTCTTGAGAGA
GCCCAAGGAGTTCTGGGAGAGGGACCCAGATTGGGGGGGTA
Sequence 1182
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GACTAAGACACTGGCCATACCACTGGACAGGGTTATGTTAACACCTGAA
Sequence 1183
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TCACCTT
Sequence 1184
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Sequence 1186
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Sequence 1187
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Sequence 1188
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Sequence 1189
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Sequence 1191
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Sequence 1192
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Sequence 1193
TGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCAAATGAAGTGTGAAGACAAG
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Sequence 1204
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Sequence 1205

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GAAGAATAGAGATGTGGTGCCCACTAGGCTACTGCTGAAAGGGAGCTGAAAT
Sequence 1206
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Sequence 1208
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Sequence 1241
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CAAG
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GTC
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Sequence 1251
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Sequence 1252
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Sequence 1253
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Sequence 1254
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CAACTTGCCCAGGTATTCTCCCCGGTCTTGA
Sequence 1255
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Sequence 1260

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Sequence 1261
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Sequence 1262
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Sequence 1264
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ANAAGNCTTANCCAAACCCCAAATACTAACAAT
Sequence 1265
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Sequence 1266
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Sequence 1267
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Sequence 1268
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Sequence 1271
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Sequence 1272
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Sequence 1273
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Sequence 1278
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Sequence 1283
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Sequence 1284
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Sequence 1286
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TTAACACC
Sequence 1287
CCGCGGTGGCGGCCGCCCGGGCAGGTACCAAATGAAGTGTGAAGACAAGGCCATCCACCA
CTTTATAGAGGGTGTAAAAATAAACCAGAAATCAAGGGAGAAAGAAAAGATGAAAGACAA
ACTGCAAAAAATTGCCAAAATGCGACTTTCTAAAAATGNGCAGATTCTGAGGCTTTGCAT
GTCTTGGCATTCCTTCAGGAGCTGAATGAAAAAAATGCAACAAGCAGATGAAGACTCTGAG
AGGGGTTTGGAGTCTGGAAGCCTCATCCCTTCAGCATCAAGCTGGAATGGGGAATGAAGA
ATAGAGATGTGGTGCCCACTAGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGT
TGGTATTCAAAATATGTAATGACTGGTATGGCAAAAGATTGGACTAAGACACTGGCCATA
CCACTGGACAGGGTTATGTTAACACCTGAATTGCTGGGTCTTGAGAGAGCCCAAGGAGTT
CTGGGAGAGGGACCAGATTGGGGGGGTAGGT
Sequence 1288
CCGGGCAGGTACAAGATAGTCATCTCAGTAAAAGGTCTATTATCTAACTTGCCAAACTTG

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TTCACTGAGAGCCCTAAGGAACTAAAACTGCCATAATGCCGTGCACAGCTTGAAAAGCAA
TTAGAGTAAGCAAGATAGTTTTTCCTCCCTTCCAGTTCCTCAGCAGGCCTGGCTGAAGGC
CCAGGAGGGAAGGAAATATAAGAACCAACAATAAAAATAGCAATAGCAATAAGAAGAATG
CCATCCCATGGAGCACACCATAATTCTGGAACCACCTCTCCCGGATCAGGCTTCCATTGC
TCACGATGCTCACGCTGGGCAGCCGCAACTCTACTTTGCAGAACCTCACCAACTTGTCCA
GGTATTCTCCCCGGTCTTGAAGAAATGGCTCTCCACCTGAAAAGTTGATCTTTCTCCATA
CCAGCTTCCTTAAAGCAAAAGCAATCCTCTCTTTGCTTNCTCAAGGGGCAAGCACAAAGG
GATGTTTTTGGCTGTGTGGAAACAGAAAGCCCGCATTTGTAGTTTGCACTGGCCAGTGAA
GTGATAGTTGACCCTGGTTGGGGTGGGGG
Sequence 1289
CCGGGCAGGTACCAAAATTGTAAGAAGAAGCTTGGGAAGCTGCCACCTCAGTATGCCCTG
GAGCTCCTGACGGTCTATGCTTGGGAGCGAGGGAGCATGAAAACACATTTCAACACAGCC
CAGGGATTTCGGACGGCTTGGAATTAGTCATAAACTACCAGCAACTCTGCATCTACTGGA
CAAAGTATTATGACTTTAAAAACCCCATTATTGAAAAGTACACAGGAGGCAAAGTGTTTC
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CTAGACAGGAAGGCCAGGCAATGCTTAGGCAACTAAAATGAGGTTGGGGGTAATGCTAAC
GTCACCCTCACAGGGATGGCCACGGGGACTGTTATTCGCAAGCTGGTTTTCTAGGCCTGT
TAGCTGGAAGCATGGTGAGCACCATTTCTGGACGCTCAGGCCGTGTCGGGCTTNAAGTCA
TCTTNCACCACACAGGTACCTTNGGGCCGGNTCTAGNAACTAGTGGGATCCCCCCGGGCT
GGCAGGAAATTCGAATATCAAAGCTTTATCGATACCCGTCCGACCTTCGANGGGG
Sequence 1290
AGGTACCAAATGAAGTGTGAAGACAAGGCCATCCACCACTTTATAGAGGTTGTAAAAATA
AACCAGAAATCAAGGGAGAAAGAAAAGATGAAAGACAAACTGCAAAAAATTGCCAAAATG
CGACTTTCTAAAAATGGACAGATTCTGAGGCTTTGCATGTCTTGGCATTCCTTCAGGAGC
TGAATGAAAAAATGCAACAAGCAGATGAAGACTCTGAGAGGGGTTTGGAGTCTGGAAGCC
TCATCCCTTCAGCATCAAGCTGGAATGGGGAATGAAGAATAGAGATGTGGTGCCCACTAG
GCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGTTGGTATTCAAAATATGTAATGA
CTGGTATGGCAAAAGATTGGACTAAGACACTGGCCATACCACTGGACAGGGTTATGTTAA
CACCTGAATTGCTGGGTCTTGAGAGAGCCCAAGGAGTTCTGGGAGAGGGACCAGATTG
Sequence 1291
AGGTCATAAAACATTATTCCTTCCTTGGCCTAAAAACTCATCGCCACCTACATTAAAGCT
AATATGCCTGATTACTGTTTTTAGAGAACTTATTTTATTAGGGCAGTTCCAAGCTCAAAA
ATCGCTAACTGGCACCTTGTNGTACATAAAAATGCACCCTAGACCCGAAACTTACTAGAC
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TTCTACAACTTCATATTTTATAAATAAAAAGACAAAAATGTCGGGCCTGTGAGCTGAAGC
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AAGTCTGGAGCAGNCGAAAAACCACAAAGAAGTGAAACAGCCAGGTTTCTGNCTTAACTA
ATTAACCCAC
Sequence 1292
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TTCCTTGGCCTAAAAACTCATCGCCACCTACATTAAAGCTAATATGCCTGATTACTGTTT
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Sequence 1293

TABLE 1

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CCGGGCAGGTACCAAATGAAGTGTGAAGACAAGGCCATCCACCACTTTATAGAGGGTGTA
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TTGGGGGGTAG
Sequence 1294
CGAGGTACCGCTGTGTCCGGGTGGGTGGTCAGAATGCCGTGCTCCAGGTGTTCACAGCTG
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CCCAACTGGGTTTCCCAAGCTATGTAGTTCAGATAACCTCAGAGTGAGCTCGCTGGAGGG
GCAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTCTTGCCAGATGACAAGGTGACTGC
ATTACACCACTCAGTATATGTGAGGGAGGGATGTGCCTCTGGCCACGTGGTTACCTTGCA
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CTTGCTCTCGCAAGTGGCCCTGGCA
Sequence 1295
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TGCTACCTTCACACGGCTGGAGCACTCCCAAGCTGTGAATGTCATCTCAACAACCTCAGC
CAGAGTGTCAATTTCTGTGAGAGAACAAAGATTTGGGGCACTTTCAAAATTAATGAAAGG
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GAACTGCTGTCAGCCATTGAACATGTTGCCGAGAAGGCTAAGACAGCCCTTCACAAGCTG
TTTCCATTAGAAAGACGGCTCTTTCAGAGTGTTCGGAAAAGCCCAGTGTAATGACATTGT
CTTTGGATTTGGGT
Sequence 1296
CGAGGTACAGGAGCAACCTTCTTTCCACCATTACTGGGAATTCCACCACTATTTGCTCCC
CCAGCCCAGAATCATGATTCTTCTTCATTCCATTCAAGGACTTCGGGAAAAAGTAATCGA
AATGGTCCCGAAAAAGGTGTAAATGGGTCAATAAATGGAAGTAATACATCATCTGTAATT
GGTATCAACACATCTGTACTTTTTTTTTTTTTTTTTTTTTTTTATCTAAAAGCAACATAATTA
TTTTTCTTGCGATTTTTTTCAAGAACTCTTTTTAATTGTCTAACACCTGATTCTAGTGTAT
AGCTTCTGATT
Sequence 1297
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GTAAAAATAAACCAGAAATCAAGGGAGAAAGAAAAGATGAAAGACAAACTGCAAAAAATT
GCCAAAATGCGACTTTCTAAAAATGANAGATTCTGAGGCTTTGCATGTCTTGGCATTCCT
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CCCACTAGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGTTGGTATTCAAAATA
TGTAATGACTGGTATGGCAAAAGATTGGACTAAGACACTGGCCATACCA
Sequence 1298
CCGCGGTGGCGGCCCGCCCGGGCAGGTACCAAATGAAGTGTGAAGACAAGGCCATCCACC
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AACTGCAAAAAATTGCCAAAATGCGACTTTCTAAAAATGGAGCAGATTCTGAGGCTTTGC
ATGTCTTGGCATTCCTTCAGGAGCTGAATGAAAAAATGCAACAAGCAGATGAAGACTCTG
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GAATAGAGATGTGGTGCCCACTAGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAA
GTTGGTATTCAAAATATGTAATGACTGGTATGGCAAAAGATTGGACTAAGACACTGGCCA
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TTCTGGGGAGAGGGACCAGATT
Sequence 1299
CGCCCGGGCAGGTACCAAATGAAGTGTGAAGACAAGGCCATCCACCACTTTATAGAGGGT
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GCCAAAATGCGACTTTTAAAAATGGAGCAGATTCTGAGGCTTTGCATGTCTTGGCATTCC
TTCAGGAGCTGAATGAAAAAATGCAACAAGCAGATGAAGACTCTGAGAGGGGTTTGGAGT
CTGGAAGCCTCATCCCTTCAGCATCAAGCTGGAATGGGGAATGAAGAATAGAGATGTGGT
GCCCACTAGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGTTGGTATTCAAAAT
ATGTAATGACTGGTATGGCAAAAGATT
Sequence 1300
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TAAAAATAAACCAGAAATCAAGGGAGAAAGAAAAGATGAAAGACAAACTGCAAAAAATTG
CCAAAATGCGACTTTCTAAAAATGGACAGATTCTGAGGCTTTGCATGTCTTGGCATTCCT
TCAGGAGCTGAATGAAAAAATGCAACAAGCANATGAAGACTCTGAGAGGGGTTTGGAGTC
TGGAAGCCTCATCCCTTCAGCATCAAGCTGGAATGGGGAATGAAGAATANAAGATGTGNT
GCCCACTAGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGTTGG
Sequence 1301
CNAATTGGAGCTCCCCGCGGNGGCGGCCGAGGTACAGTATGGCTTAAAAGGCTCTGCCTT
AGATTCTAGAATCCAGAACATTTTCTCCAAAGACAATCAGGGTATGGGGGAGAAGTTAGT
TCCAGAGAAGAGAGCGAGTCCAGGGTAGAAGGGATTCTTCTCTCCTGAGGGTCTATGGTC
TCCCATTTTTTTAAAGCAGCAGNGGTATCTATCCCACTCATGGCCTAGAGGTTGCACAGAG
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CGTTGAAGGCGGCCAGCACCTCGAAAGAGATTCTCTGATTTTTTGTGAACACCTGGATGG
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GAACTTCAGCTTATCCC
Sequence 1302
CCGGGCAGGTACCAAATGAAGTGTGAAGACAAGGCCATCCACCACTTTATAGAGGGTGTA
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AAAATGCGACTTTCTAAAAATGGAGCAGATTCTGAGGCTTTGCATGTCTTGGCATTCCTT
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CCACTAGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGTTGGTATTCAAAATAT
GTAATGACT
Sequence 1303
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ACAACCAATCATGGCCAAGTCCACTTGAGGAATTGTCTCTGTAGATTTATCTGTAGACTC
CCTAATA
Sequence 1304
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AACCAGAAATCAAGGGAGAAAGAAAAGATGAAAGACAAACTGCAAAAAATTGCCAAAATG
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CCTCATCCCTTCAGCATCAAGCTGGAATGGGGAATGAAGAATAGAGATGTGGTGCCCACT
AGGCTACTGCTGAAAGGGAGCTGAAATTCCTCCACCAAGTTGGTATTCAAAATATGTAAT
GACTGGTATG
Sequence 1305
AGGTATTCGACCCACGCGCCCGTAGTTTTTATCTTTGACCAACCGAACATGACCAAAAAC

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CCGGTTTGCGTTATTNGGGCCGCTCTTCCCGCTTTCCTCGCTCACTGGACTCCGCTGNCG
CTCGGGTCNTTACCNGCTTGCGGGCCGAAGCCGGGTAATTCAAGCTTCAAC
Sequence 1306
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TTGAAGCTGGAAGCAAATACAAGTCTGAGGGGCTCTAAGCTGGGAGGTTCTGGCCTCTCC
CTAGCTCTCTATGGCTCTACCTCTCTGCTTGAAGCTCCCTGCACTGCACTCCCATTACTC
TGACTGGGGATAGGACCACTGCTGACAGGGCCCCACCTCAACTTCTTTCATTGCCCTCTT
CCAGGAAATCCCACCCTGGGATACTTCAAAGACCTCATATGCTACAAAGATCAAGGCCAC
CTAATGAGTGCTCTAGAGATCAGCACCAAAGATGCTTGCCAGAGTCTTCTCTATATGTCC
TCCCTCCTGTATCAAATAAGTCACCAAGTATAGCTGACTATCTCCATAACATCTCTCCAG
TTGTGGCCTTAGTTCCAGCCTTCATCACTCTGCATTCTGAGGAGCTGATATCTGTCTCCT
GCTGCCAGCCCCTCACCCCCAGTCGGTCTCCAACATACTTTTTTTTTTTTTTTTCGGACN
CGTGGGTCGAAAGCCTTGACCCTGCC
Sequence 1307
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AAGTTGCTTTTTACTTGAGTAGGAACCCTTGATTGATTTTTGCGGACGCGTGGGTCGAAG
CTTGACCT
Sequence 1308
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Sequence 1309
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CCCGGGAANTTTCAANNNNTTTNNGCCCNGGGGGNTAANAAANAAGGNGNAAATCCTNTTT
TTTTTCANAAAAAAAAAAAAAA
Sequence 1310
GGGGGGGCATTTCACGCTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGG
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CTGTCTATGCATAGAAAACTGCTTTATGCCTAAGATAATTACTGGGATTTAAGAAAGTGA
GAAAAAAGAATAGGTGGGATTGAGAAATTAGGTAAAAACAGAAGAGGCCAACTAAACCCA
AGTGCTGCCCTTCAAGGGCTCTAGTAACCGGACGCGTGGGTCGAAGCTTGACCT
Sequence 1311
ACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTAATCCCGTCTT
ACAGAAGAGAAAACTGAGATTTAGCAACATAAAAGTATTTCCCGTAAGTAAACAGTAGAG
CCAAGATCTTGACCTACGCCATCTGATACCTGAGCCCATGCTATAAAAGAGGAGCATTAG
AAATATTTGAAAGATAGAAATGAGAACTAGTCAATATTTATTTTGCTTAGCACTGTATTC
AGTATTATGGCATCTTAAAGTAGTTAAGACTCAATATTTCATCAAAAAAGTTTAAAATCT
AATCAGAGAAT
Sequence 1312
TACTTAGGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCG
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AACATTTTCCCTTCTTGATTTTAACATCTACAAAATAAAAAGTATGTTAATATCAAAAAA
AAAAAAAAAAAAAAAAAAAGGN
Sequence 1313
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TTTCTAGGGTTCTATTCATTTT
Sequence 1314
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CTGGTCTGGAGAGGGCTCTGCAGCAAGTACCT
Sequence 1315
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GACTTTCAAACTATAAAATTTAGAAAATTATAATAAATTATGAAATAGAGGCCCTTTCAT
GTCAAAAAGTCATGAAAG
Sequence 1316
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TABLE 1
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TAAAAGCAGCTTACATGAATAAAGAAAGGGCAGCTCAGATTGCTGAAAAGGATGCCATTA
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GAATAATAAAGGAAGAGAATGCTGCAGAAGACAAACGAAACAAAGCGAAAGCACAGTACC
TGCCCG
Sequence 1317
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CAAGAAATGCATGTTTCAAATAAAATTCTCTATTGTAAATAAAATTTTTTCTTTGGATCT
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GAACCAGTGCTGCTCTCTGTCATAAAAAAGAACATGTAAAATTTATTTTTATAGGCTTTG
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Sequence 1318
AGGTCAAGCTTCGACCCACGCGTCCGGTTACTAGAGCCCTTGAAGGGCAGCACTTGGGTT
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TCTTAAATCCCAGTAATTATCTTAGGCATAAAGCAGTTTTCTATGCATAGACAGTTCATT
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GCGGCCGGCCGCTCGTGATCTAGATCCCCGACCT
Sequence 1319
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TGCTTCTGACCTTATGCTCAAGAACTCCCCTAACTCTGGCCAGAGCTCAGCTTTGGCAAC
TCTGACCGTTGAGCAGCTCTCATCCCGGGTTTCCTTTACGT
Sequence 1320
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AGATCCTTAATGAGCAAAATATATCCCCTATTATTTTCCTACAAGTTGCTTTTTACTTGA
GTAGGAACCCTTGATTGATTTTTGCGGACNCGTGGGTCGAANCTTGACCT
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Sequence 1322
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ATTAAAGAGCTGTTGTGGGACTTCCAAAGCAGAAGACAGTAGGCTTTCAGAAATTTGATA
AAAATAGCACTTTGCATTTCTTGAATCTTGAGCTAAATGGAAATTAATACTAAACATTCT
CCACTGGTAAAATAGAGAATAAGGATATTAACAGTAAAAGAAAAGAAGAAGAAAAGGAAA
TGTGCTTCCACAGATTTAGAAACATAAGTAACAATCTAAGTTAAGGCTTTGGCACCTGCC
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TGCAAACAACTTAAA

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Sequence 1323
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTC
CGCAGAAACCTTGCCATCATTCTTACTGCTGGTTTGCATCTCATTTATGGTGNNTCTGGG
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TGCCCTATCCTCTTTTTGATCAAAGATAGAGACTAAGACTGGGAATTATGACAGAAAAAG
TCATATTTTTCTTTAAATGATTTTGAAATGTTAAAATAGGCCAATATGAGTCAAAGTGCA
AATTTTTTTGGTGACCTGCCCGGGGCGGCCGGCCGCCCGGGCAGGTACTAAGCATTTCAGT
TCCAGGAGAATAAAAGAAATTCCTATTTGAAATGAATTCCTCATTTGGAGGAAAAAAAGC
ATGCATTCTAGCACAACAAGATGAAATTATGGAATCAAAAGTGGCTCCTTCCCATGTGCA
GTCCCTGTCCCCCGCCGCCAGTCCTCCACACCCAAACTGTTTCTGATTGGCTTTTAGCTT
TTTGGTGGTTTTTTTTTTTTTT

Sequence 1324
CCGCGGTGGCGGCCGCCCGGGCAGGTGCCTAATATATTTACTCTCTGGTCCTTTACAGGA
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ACAAGACTATGTAGTCAGTAAAGCACAAACAAAATTGGGGCTTTCCCTAGCAAGGTTGGA
AAGGCGGAGAAGAAATGGATTTGGATAGGTAGTCAACAATGTCTGTTTTATGTTACCACA
CATTTTCTCGAGAAATTTCAATCAGCTCTCTGAGAACAGATTCATCTTTAAATGAATGTT
CATAGGTAACAGCAACTCATGCATCAATGTTGCAAAGTGAGCTCATTTTCACATTGCTTC
AGGTTAGGCAGAAGGTTTGGTAAAGGGATTAACGTAATTGTTTCCTTGNTGTTTACAAAA
AGAAGTCCCAGTTGGCATGCCACATAAAATCTTCTGNATCTCACTCTTGGTTACATTTC

Sequence 1325
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTCACGCGTCCGCAGAGGCCC
AGGCTCCCAAACCGACAAAGTGAAAAGAGACCAGAGAGGCCAAGCATATTGACTGGTGCT
GTTCAGGGCCTGCTCTTTTCCACTCACCACTTGTTTTGCTGCTTGTCACGAGGAGAGTTG
TTCCTGTATGTGGCTGCTCTCAGATCTTTCCAAGCAAGCCAGTCATTTGAAGAGGTTTTC
TTTTCATGCTGGAGGGCAGGCTAAGATCAATGAGTGGAAGAGAGAAAGGCTGTTTTAGCT
CAAGTTAAAGGAACACCTTCTAGCCATCAAAGCCGCCCAACAGAGGCAAGGGCCACCACA
CATGAGAGAGCGCTCTNTCCTTAA

Sequence 1326
GCGAATTGGAGCTCNCCGCGGTGGCGGNCGCCCGGGCAGGTACCAAAATAATTACCAACA
NTACATTATGTACACCATTTACAGGAGGGTAACACAAACCTTGACAGGTAGTAACTTTTC
ACCCCACATNACTGAACGCTTAACACTCCTGGCTGTTAATTGTCAGTTCAGTGTTTTAAT
CTGACGCAGGCTTATGCGGAGGAGAATGTTTTCATGTTACTTATACTAACATTAGTTCTT
CTATAGGGTGATAGCGGACGCGTGGGTCGAAGCTTGACCT

Sequence 1327
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TAGGCATTCCAGAATCTTCTCTTTACGAGTTCACCTGCTAGTATAATCTCCACAACTTGA
ATGGCCTTGGTTGTTCTGTAATTGCTGCCAAAATCATCACAAGCTGTACCTGCCCGGGCG
GCCGGCCGCCCGGGCAGGTCAAGCTTCGACCCACGCGTCCGGATGGGAATTCAGGTATGA
AAGAAAACAGGCAAGGAGGCACTGAGGGAGAAAGACACAGACTTTATCGCTCTGTGGCTC
ATTGTTACTGGAATATTCTAAAACTCTTGTTCACATGCTATTATGACTTATAAAGCAGCA
ACAGCTGAGGCGCACCAGGACACAGCTTCCATTTCTTTAACGT

Sequence 1328
AGGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTCCGA
AAAATGGGAGACAATTTCACATGGACTTTGGAAAATATTTTTTTTCCTTTGCATTCATCTC
TCAAACTTAGTTTTTTATCTTTGACCAACCGAACATGACCAAAAACCAAAAGTGCATTCAA
CCTTACCAAAAAAAAAAAAAAAAAAAAAAGACCTGCCCGGGCGGCCGGCCGCCCGGGCAGGTA
CAAGCTCGACCCACGCGTCCGAAATAATAAAGCTAGAAGTAATATTTTTCCTTTTGTCTA
TTTTCCAAATTGACTCGATATTGATGGCTACTTTTGTAAGTTTTTATTTAAGTTTAAAGG
GAATATTTATTGATCACCTNTATGTGCTCAGTACCT

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Sequence 1329
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTGCTTCGACCCACGCGTCCGC
TTGGGGATTTCGAGGAAGGGTTCATAAGGGAGATTTTAGCTGAGAAATACCATTTGCACA
GTCAATCACTTCTGACCAAGTTATCAGAAAAAGGAGAAAAGAATGTCTCCCCACTAAATG
TTCTAGGGTGGTGAGAAATCTAGGGTGGTTATCTAAATCAACAATATTTAGATATTCCAA
TATCTAAATATTGTTGGAAATACTCTCCTGAAGTGTTCATTGAACTCTAAGAGAGACAGC
TTGTGTATCAGTGGCAGGGTTTAAGGTTCATTTTTTTATTCCCATATTAATCCTTTAATAT
TTAGACAAATTTCCTTCTGAGTTTAAGGATAAAATGGGATGGGTTCTGCCTGGGCCTGGC
CCTCATGGGGACATCAAAGGGCAATGTTGCAAAAAAAAAAAACC

Sequence 1330
AGGTCAAGCTTCGACCCACGCGTCCGTGAACTTTTATCAAGGCTTTTGCTCTTTTAGACT
TGAGTTTATCTTTATAATTAAGGAGAATGGTTTTTAAAATTTAGTTCCTCTGACACCCCA
AAATTATCAAAATAAATTATGTTGTAGTGAATCTGTGTTTTGAAAGTCATTGATAGGACT
TATATGAGTCAAAATTTTATGGATTATAAACTAGGCTTTATCTGGTTGGAAATAATTGCA
ATACAAGAAGCAACTTTATTAAATTAGACCTAAAGTCACAATCTTCTTCTTTGCTGCTTT
TTAAAAATTACCTATTACCTTTAAAAGATCCCAAATTTAGAAGAGGAATTAAAATAAAAG
TTAATGCAATAAAACACTTCCACAATATTCTATTACTTCAACCTCTAATCAATGAAA

Sequence 1331
AGGGCGAATNGGAGCTCCCCGCGGTGGCGGCCGAGGTACCCTAAAATTTAAAGTATAATA
ATAATAAATTTTTGTTTTAAAAAAAGAGTGTTGTCTTTGTCTTGTATTTTCTGCAGTTTG
CATGTGATATTCTTAGGTATAGATTTTTTTTTAGTATTTGTCCTGTATATTGTTATTCGAG
CTTCTGGGATCTGTGTTTTGGTGTCTATCATTAACTTTGGAATATTCTCAGTCATTACTG
CTTCAAACATTCATTCTGTTGCTTTTTCTCTTCTGGTATTATCATTACACATATATCACA
CCTTTTGTAATTCTCCCACAGTTCATAGATATTCTGTNGTATTTATTTATTTTTTCTCTT
TGCCTTTTAGTTTTAGAGATTTCTATTGACATCACTTAAAGATGATTGATGAGTTGATGA
GAATTGAGAGAATTGATGAGAATTGTTGATGAGAATTATT

Sequence 1332
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TAATGAAGAAATAGGCTGGTCCTCAATTTTGCAGAAGTTGTATCATCATAGGTCATACCT
AACATTCGTTTGTCAAGAGCAAAAAAACCCCCTTGGGTTCTCTGGATCTCACACAGCCCA
CAAACCTTCAGAATGTGGTTCCTTCCCGCAGGCTTTGTCACACTTAAGATCCAAGAACAA
ATCAGCCTGGCTTTAACATGGGGTAGATGGCAAGAAGGATAATGCGGACGCGTGGGTCGA
AACTTGACCT

Sequence 1333
CCGCGGTGGCGGCCGAGGTAGCGGTCGCACTTTTTTTTTTTTTTTTTTTTTTTTAAATAGAGA
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CTACCAAAGTGCTGGGATTTACAGGCATGAGCCACCTCTCCCAGTCTCAGTTATTATTTT
AATAAATGAGACTGAACGTCCTCTTATAAGGCTCACTCCCTTGTTCCTACTACATTTGCT
CTGTTTAAGTATCTCTTTAAATTCTTCAGTTAAGCGGACGCGTGGGTCGAAGACCTGCCC
GGGCGGCCGGCCGCCCGGGCAGGTATTAACAGGTGCTTGCAGTTTGTTGACTTTTTTGAA
AAAATCAAGTTGTAAACTTTTATTACAAATTAAAAATGAAGTTCTTAAAAATCTCAACTT
GACCAGATATGAAACAATTTAAAAACCTTTAAGGCGTATTGAGAAAAACCAGGCTTTTTT
AAA

Sequence 1334
ACTTAGGGCGAATTGGAGCTCCCCGCGGNGGCGGCCGCTCACCTGCCCGGGCGGCCGCTC
GAGGCCGCTCACCTGCCCGGGCGGCCGGCCGCACTTTTTTTTTTTTTTTTTTTTTNNCAAAA
CAAAACATGCTTAGCATGCACACTTTTACCACTTTTTTCGAGTGGAAAGTTTATTGGCAA
TATTAAATTTCACCCTANATAGGATATGAGAATGTTTTGATAAATCACAATTTATAGTAT
ATTAATGCCATGTGAGAATTTTTGTTTCCCAAGTAAGAGCTCACATGGAACTTGGTCATTA
AACCTTAAAGAAACCTTTCTCACATATCTATAGGCCTCAAATTGAAATAATCTATAAATG
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TATATAAACTTCTGCTTTGGTCTAAAACTGATATATCTTCACGTTGAGGTTTCATCTGAA
ATGCNCCACCGTTTGCTGACTTGCTTCAATATGAATTTGGATGGCTATAAAATTGACCTC
GGCCGCTCTAGAACTAGTGGGATCCCC

Sequence 1335
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CACTTTTTTTTTTTTTTTTTTTTTGGTAAACAGGCGGGGTAAGATTTGCCGAGTTCCTTTT
ACTTTTTTTAACCTTTCCTTATGAGCATGCCTGTGTTGGGTTGACAGTGAGGGTAATAAT
GACTTGTTGGTTGATTGTAGATATTGGCGGACGCGTGGGTCGAATCTTGTACCTGCCCGG
GCGGCCCATAGTTTGTCAACCACTGGTGTAAAACCTTAGTTATATATGATCTGCATTTTC
TTGAACTGATCATTGAAAACTTATAAACCTAACAGAAAAGCCACATAATATTTAGTGTCA
TTATGCAATAATCACATTGCCTTTGTGTTAATAGTCAAATACTTACCTTTGGAGAATACT
TACCTTTGGAGGGAATGTATAAAATTTCTCAGGCAGAGTCCTGGATATAGGAAAAAGTAA
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ATCCTCATCTNGAGAAGTGCTTAAAAT

Sequence 1336
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GGAGGGGACACAAGCGTTTTGAGGCTCGCTGNGTGCCAGGGAGTGTATCATTAGCTCACT
CAATTCCCAGAACAACCCATTTCACACCTGGGAAAGGTGAACTTAGAGAAGTTGAGGATC
ATGTTCCAGGTTGGCCTGGATTTGAGCCATCACTGTCTCAGGAGTAGGGAGGCTTCCCAC
TTTGCCCAGCTGCCTCCCAGCCTCGAGGCCACATCCTTTATGACCCACATCTAACTCAGC
CCCACACCTGGGGGAAAGGCTTTCAGCTTCTCTGGGCTGGACTTGGGAAATCTTTGGGAC
ACTCCTGACCTGCCCGGGCGGC

Sequence 1337
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GAACACTTCAGGAGAGTATTTCCAACAATATTTAGATATTGGAATATCTAAATATTGTTG
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TTCTCCTTTTTCTGATAACTTGGTCAGAAGTGATTGACTGTGCAAATGGTATTTCTCAGC
TAAAATCTCCCTTATGAACCCTTCCTCGAAATCCCAAGGT

Sequence 1338
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CTAGGGTGGTGAGAAATCTAGGGTGGTTATCTAAATCAACAATATTTAGATATTCCAATA
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GTGTATCAGTGGCAGGGTTTAAGGTTCATTTTTTATTCCCATATTAATCCTTTAATATTT
AGACAAATTTCCTTCTGAGTTTAAGGATAAAATGGGATGGGTTCTGCCTGGGCCTGGCCC
TCATGGGGACATCAAAGGGCAATGTTGCAAAAAAAAAAAAAAACCTGCCCGGGCGGC

Sequence 1339
CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGATTCTCTGATTAGATTTTAAACTT
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AGCAAAATAAATATTGACTAGTTCTCATTTCTATCTTTCAAATATTTCTAATGCTCCTCT
TTTATAGCATGGGCTCAGGTATCAGATGGCGTAGGTCAAGATCTTGGCTCTACTGTTTAC
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AGTACCT

Sequence 1340
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ATTGTGAACCATCAATTGAGATAACTCACTACCTTCAGGCCAGCCAGTTACATACTTTTG

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AAAAGCCAAGAGTGAAGCAGGGTTGTTTTTCATCCAATTCTTGGTCTTTTTGTTAAAGGC
AGCAATAAGATAGGGTGGTTTCGGGCAATCACTTAGCTAATTGGCTCTCTATAGTCATAC
CTGGATAATATTTGTAGTCATACCTGGGATAATATTTAAAGGGAAGAAACTAAACATAGT
CCTTAAGTAGGAACCAACTACAAT

Sequence 1341
CCGCGGTGGCGGCCGAGGTCCTAGCTTGAGTCGACCCACGCGTCCGGCCGCTGTTCGTAT
TTCTTATTCTACAACAAGGGNGCAGCCTANAGGCAAAACACATCCCATTGTCATTTTTTT
GTAAATAAAGTTGTATTGGAACATGGCCACTCTCATTTGTTTTCTATTATTTATGGCTGC
TTTCACTTACAACCTGAGTGGTTGCCACAGAAACTGTATGGCCTGCAAAGTCTAAAATAT
TTACTATGTAGCTTTTTCTTTTCTTTTTGGAGACAGTGTGCCACTCTATTGCCCAGGCTG
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CCCGCCTCGGTCTCCCAAGTAGTTGGGACTACAGGCATGAGCCACCATACCCGGCTAATT
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CCTGGTCTTAAATGACCCTTTTCCCATCAG

Sequence 1342
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GAAATATTTCCTGGTTAAGTGGAAAATTGTGCGGATGTGGCTTCTGGAAGACCTTCATTC
TAAAGCAGCGGACGCGTGGGTCGAAACCTGCCCGGGCGGCCGGCCGCCCGGGCAGGTCTG
CAATCCAGCTAGGCATGGGAGGGAACAAGGAAAACATGGAACCCAAAGGGAACTGCAGCG
AGAGCACAAAGATTCTAGGATACTGCGAGCAAATGGGGTGGAGGGGTGCTCTCCTGAGCT
ACAGAAGGAATGATCTGGTGGTTAAGATAAAACACAAGTCAAACTTATTCGAGTTGTNCA
CAGTCAGCAATGGNGATCTTTTTGCTNGTCTTGCCCATTCCTGGA

Sequence 1343
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CATCAAGATTTTTGACAAGAAAATTTTAGAAAAACTGTGGAAGAAAACTGATTGCTCTTA
GTTCTAGCCATGTGTAATTGCTGACCACCTGAAATGGTCCAAACTGAGATTTGCTAAAGC
ATAAAATACACACCATATTTCAAAGGTTTTTAAAAGAATGTAAAACATTTCATTAATTTC
GGACGCGTGGGTCGAAGCTTGACCTGCCCGGGCGGCCGAGGTGGATGGACCCATCCATTC
AGGCAGGGGGTGTGGGGTGTCCCCTGTGCTTAGAAACCACCTAGCATCATAAGCTGCAAC
AGCACTTTATTGGGATCTGAGTCTACAGTTCACATAGGGAGGTGAAGCCGTGGGAGAAGC
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AAACCTAACAAAAAC

Sequence 1344
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AAAAAAAAAAAAAAAAAAAGTGCGGCCGGCCGCACTTTTTTTTTTTTTTTTTTGCTGGGGTTT
TTTTCTTTTCTTTTTTTTTTCAGCTACAGGAATTTAGCCAATTCANAGGAAATCTTCCCCA
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GAAATAACAATAACAACTTCAACAAATAAAAAAACAGTTAAGCTAAATAAACAGATGATT
GCAGAATTTATGTGATTACTGGGTACCTCGGCCGCTNTAGAACTAGTG

Sequence 1345
CCGCGGTGGCGGCCGCCCGGGCAGGTACCAAGTTTGAGTTGAAACGGTATGTGACTTCCC
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AACTCCACAGATCACTCCTCCTGTAATCCCTCTAAGTGCTCCAAGGCAGCAGAAAGGCCC
AGTGCATTGAGGCTGGAAGCAGGAGCAGAGACTCTGGGATATAGTGCGAAAGTCTCTTTC
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TTATGGATATTTAGTATTTAGATAAAATTTTTACAGTATTCTTGAAATGAACCCAATTAA
ACACATAGTTCTCAGTCTTGACCACACATTAAGAATCATCTGGTAGACTTCTGTAAACTA
CCAATGCCTGGCCA

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Sequence 1346
CCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTTTTTACCTGAAAATGCTTATTCTAGC
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GTTTAAAGATTGCTTCAGATCTTAAACTTCTAATGAGGAAAGCTGAGAAGTCCAATGCCA
TTCTGATTCTTGCAACTTACAAGTAGTCTTTTTTTGTCTANACGCTTTCAGGACCTTCTT
TTTTCCTCAGTCAGTGTATCCAAACCTTCACAGTGATATCTTTTGGGTACCT
Sequence 1347
CTCCCCGCGGGGGCGGCCGCCCGGNAGGCNAAGCTTCGACCCACGCGTCCGCTTTAAAGG
GAATTCTNTGTAGAGTGGGAGGCGAACACGNCTGGNNCTTCCAACTCAGGAATTCTCGTG
GCTGGGCTGGGTCAGCGATGGCTTTGTCTCTTTATGTCTAAAGTGCCCTATGGCATGCTG
AAGGTTACCTAACCATTCTTTAAAAGGAGAATGACCCTCCATGGGAATGGCCAGCCTGCC
AACTGTGCAATTGAAGAAGACCCGATGGATCAACCCCATGTCTTCCTTGGGGAGAAAGTG
CATAAACCAGGGGTCCCTTTTTTTTTTT
Sequence 1348
AGGTCAAGCTTCGACCCACGCGTCCGCAAAAATCAATCAAGGGTTCCTACTCAAGTAAAA
AGCAACTTGTAGGAAAATAATAGGGGATATATTTTGCTCATTAAGGATCTTTTTATAGTG
GCTCTTGGTGCACTGCCTGTGAGTTAGCCTTATCCTCAAGGAGCAGCTTAAAAAAAAAAA
AAAAAAAGT
Sequence 1349
GCGCGTATACGACTCCTATAGGGCGAATTGGGAGCTCCCCGCGGTGGGCGGCCCGAGGTA
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GAACAAAAGAGATTGCAGATTACTTCGCAGATACAGAATAAAGCAATTGATGAAGTGCTT
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TAGCAGTGCTTTTATTTGCACTTCACTTAATTTTATAAGACTCATTTTCATGTATATAGC
TCTTTACCCCCATTGTTAACGAATAAAGTCTCTCATAATTTTTACACTTTTAAATTTTTT
AAAGCAAATGAGAAATGATTTATGTATCGTGGAACCTTTCCCATTTTGGAACCAAAGGTT
TTAATTCTATATTTTTGNCTAATATTTCTTTAAAAAAT
Sequence 1350
CCGCGGTGGCGGCCCGCCCGGGCAGGTACTATCTATAAAGGAGGTTTGATGTTTTCATTA
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GGCTCATACCTGTAATCCCAGCGCTTTGGGAGGCNGGTGGGTGGATCACCTGAGGCTAGA
TAGTTTTATTCACTTGGCTGTTTCACCAAAAAAAAAAAAAAAAAAAAAAGTGCGGCCACCT

Sequence 1351
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTGAGCAGGATTACCATGG
CAACAACACATCATCAGTAGGGTAAAACTAACCTGTCTCACGACGGTCTAAACCCAGTAG
AAACAAAGTGCGGCCGGCCGCCCGGGCAGGTGCCGCACTTTTTTTTTTTTTTTTTTTTTTAG
AATAGGATTGAATTTTATTAAAAACAAAAATAAATCTAAAAAGCTTCCTTCAGTTACAAA
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TAGGAACATGAAAGAAACTTGGAGAGAGAAGACATTCAATACTCTAAAATACTTCAGCAA
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GGCGGNTTNAAATANGGACCCCGGGTGGGGGATTNANTNAGNTTTGANCCGNNNCTTGGG
GGGGCCGGCCC
Sequence 1352

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TTTCTTAAATCCCAGTAATTATCTTAGGANAAGCAGTTTTCTATGCATAGACAGTTCATT
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GGCGGCCGCTCGAGGCCGCCCGGGCAGGTACTATGTCGATTCGACAGAACATTCAGAAGA
TTCTCGGCCTTGCCCCTTCACGAGCCGCCACCAAGCAGGCAGGTGGATTTCTTGGCCCAC
CACCTNCTTCTGGGAAGTTCTCTTGAACTCAAGAACTCTTTATTTTCTATCATTCTTTCT
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ATGGCNCCNGCAAACTTGNAGGGGCTTTTGGNNCCANAATGATTTTTAATAAAAAAAAGG
GGATTGAATAGNTAAANTCAAGGGAANGGTTTATGNAAAGGAAAAAAAAAAAGCCTCCTTC
NTGGTTTAATTTACAAAAGGTNTTTTNTGGGGGGACCGNCTNTAAAGNACTNGGGNTTNC
CCCGCAAGGTGGGNNGGTATTNACCCNTTTNNGGNTTNAAAAAAAAAAANTTNGNNNGGGT
NAACCCTGGAACNGGGGGGGGTTNGGNG
Sequence 1353
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCCGCCCGGCAGGTCTTCGACCCACGC
GTCCCGGGGTTTCAAACTGAATAACTCATTGTTGGGTCTGGATCTGTAAAAAGGTTTTGT
CACTGATGGGCAATATGGAGAGAATGTAAAAATATCTAACTTCAAACAGAAAAAAGAAAC
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AATGAGCCCGGGATGTAGGCAGGTTTTGATGTTTTGCTTGCTTTTATCCCTAACATT
Sequence 1354
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGATTCTCTGATTAGATTTTAAACTT
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ACGGGAAATACTTTTATGTTGCTAAATCTCAGTTTTCTCTTCTGTAAGACGGGATTAAAG
TACCT
Sequence 1355
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Sequence 1356
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ATTTCAGCATTATCTTTAAAAAGTAAGGACATTGGCCGGGTGCGGTGGCTCATACCTGTA
ATCCCAGCGCTTTGGGAGGCNGGTGGGTGGATCACCTGAGGCTAGATAGTTTTATTCACT
TGGCTGTTTCACCAAAAAAAAAAAAAAAAAAAAAAAGTGCGGCCACCT
Sequence 1357
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CTCTGTCCATAAAATGGGAGCTAATATTCTCCAACCTGTGTGCCTGACATGATGGTTAAA
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AAGGGCTAGTGACGAAAAATAAATTTTTAAAAAAACCTAATAAAACAAGTTTGTAATTTATA

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ATTGTATACAAATAAAAGATGTTACAAAAAAAAAAAAAAAAAAAAAAAAGGACCTGCCCGGGC
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GGCAATTTTACTGGGGATTAAACCCTACCTAGGATTGCTTGCTGGGGCTTAGCAACAGGG
TCCAGTTCACACTTAGCACTAATTAAATACTTTATTGAATAAATACAATACCAAACAAAA
TGCATTCAAA
Sequence 1358
CCGCGGTGGCGGCCGAGGTCAAGTTTCGACCCACGCGTCCGCATTATCCTTCTTGCCATC
TACCCCATGTTAAAGCCAGGCTGATTTGTTCTTGGATCTTAAGTGTGACAAAGCCTGCGG
GAAGGAACCACATTCTGAAGGTTTGTGGGCTGTGTGAGATCCAGAGAACCCAAGGGGGTT
TTTTTGCTCTTGACAAACGAATGTTAGGTATGACCTATGATGATACAACTTCTGCAAAAT
TGAGGACCAGCCTATTTCTTCATTAGAAATGCAGGAAACCTGCCCG
Sequence 1359
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AACTTAGAAATATGTAAATTTAATATTCAAAACCAAATTATTTTTTAAAGAGGAAAAAAA
TATAAAACCTGCCCGGGCGGCCGGCCGCACTTTTTTTTTTTTTTTTTTTTTTTNAAACTTT
AATAGNGTNCGGAAGNTGAATAATTTATGAAGGAGAGGGGTCAGGGTTGATTCG
Sequence 1360
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GTTTCATGTGTTATTNGTGAAAAT
Sequence 1361
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Sequence 1362
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CA
Sequence 1363
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Sequence 1364
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CT
Sequence 1365
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Sequence 1366
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Sequence 1367
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GATTAAAGTACCT
Sequence 1368
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Sequence 1369
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Sequence 1370
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Sequence 1371
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Sequence 1372
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G
Sequence 1373
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TGATTGAAACATTTTCCCTTCTTGATTTTAACATCTACAAAATAAAA
Sequence 1377
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GACTAA
Sequence 1378
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Sequence 1379
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Sequence 1383
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AAAAAAAAAAAAAAAAAAAGT
Sequence 1384
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Sequence 1385
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Sequence 1386
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TTTTAAATGACATTTTTGA
Sequence 1387
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Sequence 1388
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Sequence 1389
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CAGGCCCCACAGGCCTTGGGCCCCAGCATC
Sequence 1391
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Sequence 1392

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Sequence 1393
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TCACTATTCACATTTTAATCAGTGCTGACCAGAAGCTAAAGCAA
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A
Sequence 1395
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Sequence 1396
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Sequence 1397
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Sequence 1398
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CAAGTTTTATACATCAAAAAGCTTTTGAAGTTCACCAGACTGTCCAT
Sequence 1399
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Sequence 1400
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TGCTAAATCTCAGNTTTCTCTTCTGTAAGACGGGATTAAAGTACCT
Sequence 1401
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Sequence 1402
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Sequence 1403
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Sequence 1404
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Sequence 1405
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Sequence 1406
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ACATACCTCCTTGCACAAATGGAGGGGAATTCATTTTCATCACTGGGAGTGTCCTTAGTG
TATAAAAACCATGCTGGTATATGGCTTCAAGTTGTAAAAATGAAAGTGACTTTAAAAGAA
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Sequence 1407

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AGGTACTCAATCTAATCCAAAATTTTCTTTCTTAGCAATCTATTTTCTGTATTTAGAAAA
ATGTTTTTTATTTCAAAGAGCCTCTCAAAGAGCATTTCACGTATCTTTTACTGTTTTTCT
CTCCACCTCCAAGGGGTCTGTCTAGATCAGTGCGGACGCGTGGGTCGAAGACCTGCCCGG
GCGGCCGGCCGCCCGGGCAGGTACTGAGGACAAATCAGTTCTCTGTGACCAGACATGAGA
AGGTTGCCAATGGGCTGTTGGGCGACCAAGGCCTTCCCGGAGTCTTCGTCCTCTATGAGC
TCTCGCCCATGATGGTGAAGCTGACGGAGAAGCACAGGTCCTTCACCCACTT
Sequence 1408
AGGTACATATCACACATTTCCAAATTTGAGACCACTAATGTTTTTTAATTTCAAATATGT
ATATAAATATGTATTCTTATTTCCAATTATTTCCTTGGCATGAATTCCTAGAAATTGATC
TATTTAGTATAAGTGCTTTTTTTAGCTATATGTCCACTAGTATGGTATGAGAATGCCCTGT
TTATGCCAGTATTATCATCATTGAATATATTACTGCTGATGTTGTGGTAATACATTTAAA
CCAATGTGATGGGGCAAAAAAATTATATTTTTACTTACATCTTTAAAATTACTGGNGATC
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Sequence 1409
CCGGGCAGGTCGGACGCGTGGGTCGAAGCTTGTACAAAAACCCAAGTATCACCTGAATTA
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GGATTATATTCAATTGAAGTGCTGGAGCTCTTCTGATATTATCAATTCTCCTTCATAGAC
ATTTTATAAAGCTCTTTTATGTGAACTCTTGCTTCATCCAGGCAAG
Sequence 1410
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CACTTTGTGTTGGCTAATAATAAAAGCACTGTTTTATTCTCAAAACTCCTTTTTTCAAAAA
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NGCAGAGAANCAATGGGAGTTTTGATGCCAAAAAGGTTTTTTTTGCAGTNAAAGTAAAAA
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Sequence 1411
AGGTGATTCAGCAGGTCTGGGGTGGGACTGAGAGCTTGCATCTCTAACAAGCTCCCAGCG
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GTCAACCAGGAGAAGCAGTGTCCCCTAGAACTGGCAGGAGAGAAAGGACAAGGCTAAGAA
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Sequence 1412
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TGGCTTAGATGATCACCTGAGGCCAAGGAGCCTCGCCCTTGAGCACAAGACTATGTAGTC
AGTAAAGCACAAACAAAATTGGGGCTTTCCCTAGCAAGGTTGGAAAGGCGGAGAAGAAAT
GGATTTGGATAGGTAGTCAACAATGTCTGTTTTATGTTACCACACATTTTCTCGAGAAAT
TTCAATCAGCTCTCTGAGAACAGATTCATCTTTAAATGAATGTTCATAGGTAACAGCAAC
TCATGCATCAATGTTGCAAAGTGAGCTCATTTTCACATTGCTTCAG
Sequence 1413
AGGTCAAGCTTCGNTCCACGCGTCCGGGAAAAACGGGGTTACTAGTAGCCGCCCATAGCC
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GGCCCCCCTTTGGTTCCTGGCCCCTTAAANAACAGGCNGGTTTTATTAAACCCCAANNNN
CCCGGNTTANAAGGGGAATTNAAAAAAGGGCCCCGGCTTTNGNAAAAAAAAAA
Sequence 1414
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CTTAGCTAA

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Sequence 1415
AGGTCTTCGACCCACGCGTCCGTTTTAGATCCAAATAATGACTCATTAAATATAATTATG
TTTTAAGTATACTGAATTTCTGTTAGCTTAAAATGTTAATTCTCAGGAATGATTTTCTCA
CACTTTGTGTTGGCTAATAATAAAAGCACTGTTTTATTCTCAAAACTCCTTTTTCAAAAA
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GGAATTAGTTGGCATATAGAGGAACCCTTTTGTACCTGCCCGGGCGG

Sequence 1416
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AAGTGCNGGCCGGCCGCCCGGGCAGGTCAGATGATTGCAGAATTTATGTGATTACTGGGT
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Sequence 1417
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ATGCTGAGCCAGGGCTCCTTCCGCTGCACCACAAGAACGCTAGACCACTCGCCACCAGCC
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GGAAAACAGCCAGGGCCGGGCACGGTGGCTCATGCCTGTAATCTCAACACTCTGGGAGGC
CGAGCCGGGTGGATCACCTGAGGTCAGGAATTCGAGACCAGCCTGGCCAACATGTTAAAA
CCCCATCTCTACTAAAAATATAAAAAATTAGCCAGGCATGGTGGCGCACACCTGTAATCCC
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Sequence 1418
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GGGTTTGGAAAGAGCATGCCTCTGGAAACACAGCTTCCTGGGAATTCACATGAGGCCAGT
CCTACAGAGAGCAAGATGCACCCCAGGATTTCTTCATTTTCTAATAGATGTGGGAGTGCT
CCATTTTCCCCGACAGCGAATTTCCCCTGAGAAACGATACTAGACCCTGGGTTTGCCCAC
CTTGTAACTCTTCCTTATCTNCTCCTTTTCATCCCTAATTCA

Sequence 1419
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CACCACACTCTACAGAGGCAGTCAACTACATGACACATTCCGCTTCTGCCTGGTCACCAA
CTTGACGATGGACTCCGTGTTGGTCACTGTCAAGGCATTGTTCTCCTCCAATTTGGACCC
CAGCCTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATGCCTCATTCCATTGGCTGGG
CTCCACCTACCAGTTGGTGGACATCCATGTGACAGAAATGGAGTCATCAGTTTATCAACC
AACAAGCAGCTCCAGCACCCAGCACTTCTACCTGAATTTCACCATCACCAACCTACCATA
TTCCCAGGACAAAGCCCAGCCAGGCACCACCAATTACCAGAGGAACAAAAGGAATATTGA
GGATGCGCTCAACCAACTCTTCCGAAACAGCAGCATCAAGAGTTATT

Sequence 1420
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ACGCGGGGGAGGCGAACAATGGCGGAGCTGGGCGAAGCCGATGAAGCGGAGTTGCAGCGC
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TGTCTCTCCAGCTGTGTAGACCGCTTCATTGACACCACTCTTGCCATCACCAGTCGGTTT
GCCCAGATTGTACCTGCCCCGGCCGCTCTAGAACTA
Sequence 1421
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ANACTGCGCCCAGCTACAGNTTNATACACTTNGGACAAANTATCTGATAAAATAGAGAAA
AAAATCTTATTTACTATAGCATTACATAATAAATTTNTGAGAAAAAAATTAACCAGGGAT
GTAAAAAACCTTTACAATAAAAAATAAATAAAAAAGGAAGATCCAAATAAATTTTAAAAT
ATTTTATGTCTTTGGATTGAAAGAATAAATATTAATAAAGTGCCATATTATCCAAAGTGA
TCTATAGATTCAATACACTTCCTATCAAAATTGCAGTATTTTTTTCACAGTAATGGAAAT
TCAATTCTAAAATTTACATGAAACTAAAATAAACTTTGAATAGCCAAAACAGTCTTGAGG
AAAAGGAACAAGGCAGAAGAATATCATACTTACAATTTCAATCTATATTTGAAGACTTTA
TAGAANTAAAA
Sequence 1422
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TTTGTGGATCCCAATCCGAGATTTCCCTTGCTGAAAGACAAGAAAGTATCTCATATAAAA
GTGCTGTAGCAAGTATTTGTATACTCCAGAAATAAGCTTCTGTAATTCTTAGCTGCCAAT
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ATTTCAATGCATGCCACCAGCTTCATCAACCCTT
Sequence 1423
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GCAGTGACTCCATACCAGGCCCTGCTTTAAACGCTTTATCTGCATTATCTTACTTGATTC
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TTGAACCTGGCCCCATGACTAAA
Sequence 1424
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CATTCGTTTCATCTCATACTCCTTTCGCTTTTCAGCATTGCTGACAATGTCCCAAGCTGC
TCGCAAAACCTTGAAGGCCTCCTCAGCCCGGGGATGATGATTTTTTGTCAGGATGAACCAT
CACTGCCAGCTGTCTATAG
Sequence 1425
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Sequence 1426
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GACTTTGAATGGGGATATTCCTTTCCATCGTCCA
Sequence 1427
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CTGGGCTCCACCTACCAGTTGGTGGACATCCATGTGACAGAAATGGAGTCATCAGTTTAT
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CCATATTCCCAGGACAAAGCCCAGCCAGGCACCACCAATTACCAGAGGAACAAAAGGAAT
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Sequence 1428
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Sequence 1429
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GTTCCCTTCGCATGGTAAAGGGATGTGGCAGATATGATTAAGCTAAGGATCTTGAGATGG
AGAGTTTATCCAGGATTATCCAGGTGTGCCCAGTATAAT
Sequence 1430
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CTTTGCGGATTCTAGAACGGAACCTTTTTTTTAATTCTTCCCAGTAGAAACGTAGGAACAA
TTTCGTGAACGCAATCNGGAGTGCCCAACATGGC
Sequence 1431
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Sequence 1432
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Sequence 1433
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CGCTTTCTCAAGCCTAGCCGATTAGAAGGGGCTGCCGGGCTTCCACCACACCTCATCGAG

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GNAATGGTTTTNTGGNNAAAAAGCCCATGGAAATACTGAGCCCATGCCNCTCACGTTGNA
AAAGCCCCGTTCCTTGCC
Sequence 1434
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CTCAGGAATAACACTTGCAAGGGAGTTCCTGATGAAGTGGATTCTTGTTATTCTAGGAAT
AGGCCTACATGGTGCACTGGCAATGTGAGATTATACCTCAGCATTTTCAAAGAGCATAAA
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TACCTGCCCNGGCNGGCCGTCTANAACTAAGTGGATCCCC
Sequence 1435
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Sequence 1436
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TTGT
Sequence 1437
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Sequence 1438
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CTCCCTCCGGATAAATTCT
Sequence 1439
CCGGGCAGGTACCGCGGGGGGCCGTGGTCAGAGCGAGCTTCGGAGAAGCAGTGGTGGGTT
CCATGTGATGGTGGAGTAGGAGGCAGGTCTCCGCGGTTCATCTGTGTTGCTCTAAATGAC
ACTGTTTCATTATTTTGATGGCTGGAGAATATTTCCTAAGTGTATGTATATGAAGAAGTT
TCTTGATCTCTTTATCTGTGGATGAACAGCTACTTTGAAACATATGGTACCTCTGTGGTC
AGACCATTTGCCAAGCTTGTGAGGCCTCCTGTTCAGGTATACGGTATTGAAGGTCGCTAT
GCCACAGCTCTTTATTCTGCTGCATCAAAACAGAATAAGCTGGAGCAAGTAGAAAAGGAA
GTTGTTGAGAAGTAGCACAAATCCTGAAGGAACCCAAAGTGGCTGCTTCTGTTTTGAATC
CC
Sequence 1440
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TTCATAGCCGCGGACACAACTTGGGCCCACAGTTAACCGAGGAGGAAGGCAGAGCGTGCT
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GGCAGCAAGGAGTGCACTGGTGAGGGGAAGAATTGTTGTCATCCTTTCTCTACGACTCCA
AGAGAAACTTTATACTGGAGGAAGAATATTCTACCACTTTGGGATGCTTCCAAAGAAATG
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ACCT
Sequence 1441
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CTAGGGAAGGCGGGAAATTTTAGATATTGCTGTTGGCTTAGTGAAAATGCATGCTTACCC
GGTCACCTGTGGCTCCAGCAGGACCAGGGGCACCTACAGCACCAGGAGCACCCTAGTACC
T
Sequence 1442
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CAGGCTGCTCGGGAGACAGAGGCAGGAGAACCACTTGAGGCCAGTTCAGTCTAGCCTGGG
TAACATAGCAGGACCCTGTCCCTTAAATAATAAAAAATTTAA
Sequence 1443
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GAGGCTTCTCAAAGCCTTCAATTATTACCAAAAAAAAAAAAAANNTTTTNNNAGGTACCT
Sequence 1444
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GAGGGAAGAGTCTGAGGAGGAAGAGATCCATGGGATTCATAATTGAAATAGAGATTGGAG
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Sequence 1445
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GGCTGCAGGGTCAGAGGTGGGGTCTCCTTGTGGTGTGGGTGTGTCCCCTTCTGTAGGCTC
TGATCCCTCAGCTTAGTTTCGGGAGACCTCCCTGAGGGTGGAATACATGTCTGGCTGGGC
TCCAAGGTTTGTGTGGCAGTTTGAGCTTCTGGAAATGCTTCCTCTATGCAGCCATGCTGT
CAGCCCAGGTCCCACTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCATACTNTGCCT
TCTTTCTTTCACCTGTCTGCGACTCTTCAAAAAAAAAAAAAAAAAAAA
Sequence 1446
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CTTTTCCCCAGGTGTCCAGAGTTTTCCAGAATTGTCCCAAGGCTCAGTCCACACCAGTTC
TTCTCCAGTGTGCTCTCCTGAGAGGCCAGGCACACTCAACAATTATCTAGATGAGTTCCC
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Sequence 1447
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CCAATTTGGACCCCAGCCTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATGCCTCAT
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CCAACCTACCATATTCCCAGGACAAAGCCCAGCCAGGCACCACCAATTACCAGAGGAACA
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TTTCTGAC
Sequence 1448
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CAGCAAGCAAAGTGCTTTGACTTCTTGCTTCAGTCATCAGCCAGCAAGAGGGAACAAAAC
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Sequence 1449
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TCCCAGGACAAAGCCCAGCCAGGCACCACCAATTACCAGAGGAACAAAAGGAATATTGAG
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Sequence 1450
CCGCGGTGGCGGCCGAGGTACAAATTGNCGTTTTTATTCCTCTTATTGGGATATCATTTT

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AAAAACTTTATTGGGTTTTTATTGTTGNTGNNTGATCCCTAACCCTACAAAGAGCCTTCC
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Sequence 1451
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Sequence 1452
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Sequence 1453
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Sequence 1454
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TATTTTCATGAATGAA
Sequence 1455
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GGGGGGGGGGCCCCCGGGGTAACCCCCAAGCTTTTTTGGTTTCCCC
Sequence 1456
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Sequence 1459
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Sequence 1461
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Sequence 1465
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CCCCCC
Sequence 1466
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Sequence 1470
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Sequence 1472
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Sequence 1473
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Sequence 1474
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Sequence 1475
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TTTTTTGGNTGGGGAATTTCCTTTAAATNGAACCCCCAGGTTCCGGGAACAAGGGAATTG
NAGGCCCAAAGGGTTCAAAAAAGGGGGAAAACCNTTTTTNTNAAACCCCCCAAGGGTATT
GGCAAGTTTGGGACCACCATTAATTAATTTTTTTTTTTTCCTTTGGGGAAAAGGGAATGGT
TAATTTTTTTCCCCCCAAAAATTCCAAAANCCCCTGGGGTGGGGAAATTAAAGGGAAAATTT
TCNTGGAAAAAAACCAACCCAATTCTTAATTTTTTTTGGAAAAAGGCCTTAATTTTTTTTTTT
TGGGAATAACCAACCC
Sequence 1476
AGGTACAAAATTTTATTAAAGGTCTTTAGAGAGCAACATCCAGACTCCAGAATACAGCTG
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TGGGCCTTCCCAACNCCCTTTANTTGTTTCTTGNAAGAAATGGGNGGGGGNTTTGNTTGGG
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NCCTTTCNAAACCGGTTGNGGNNTTCCATGTGNCCAAGGGNGGGNGGCCTTTTCTTTTTTA
NGGGGGGNCCCCCAAANTTCNTTTTTNAACCCCCAANTANTTTTGNTTTTTCCGGNNAANGT
CCCGGTGTTTNTACCCGGAAAATTCTCCGGNGGGGGGNANCAAANGGNGNNTTTNCCTTGG
TTGNGTATTNCCCCAAACTAATTTAAAAAAAAAAAAC
Sequence 1477
CGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTGATGAAATGCCAGGGTGA
AAGGGATAGCCAAATAGGCTAAAGCACAAGTGCCACTCTAGGTTAATTTCGGCAGGACNN
GCCCCAAATAAAAGGGTCCCACCNGACCANNTTACCCAATNCAACAACCATTTCCCGGNT
TTCGGGG
Sequence 1478
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TGAGACCGTCCCTGCTGTGTTCGGTGGCTGTGGAGTTGATGGCATCTTTGCTCCAGGTGA
CACCTGCATGCTGGCCAGCTGAGCGGCATAGAGCTGCTGCAAAACAGGGAAGACAAACAT
TGATCTCTTTAAATGCAGCTGAAATTGAGTTTCAAAAGAAAAAACTTACCATATTGTTAG
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GGCAAATAATAAAACAGAAAGAAAAAGGACAGGTATGGGAGCCATAGTTCTGTTTCTGGT
CCTTCTAGCAACAACTTTATGATCCTGGACAAAGGATTTGATCTCTTTAGAATTCAAGTT
TTTTTTTTTA
Sequence 1479
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Sequence 1480
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ATTTAAGACACCAAAAAATAAAAGACTCCTACGAAGAACTGTTTTTGTTTTCCTCTTCCT
TTTGAGAAGACACTATGAATTAAATTCTACAGCTTTTTTTTGATATATGGAAATTTGTAG
AACAGAAATATTTTAGTTAAAGTGTGACTTTCAGAAAGGGAAAATCAGGGCACAGCCTTG
GTCTGTGTTCCCCAAATATTCACACTTTAAAGAATTCTTAAC
Sequence 1481
ATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACATGATTGTCCTTTATGCATTAAATTCAT
GCTTTTACATACTTGTGTTTCCTTTTCATTTCGTCCTTCCAAATCATTATTTTAGGAATA
TAGAGAAAAGGGTTGGCCAGGTGCAGTGACTCACACCTGCAATCCCAGCACTTTGGGAGG
TCGAGGTGGGTGGATCACTTGAGGCTAGGATTTTGAGACCAGCCTGACCAACATGGAGAA
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AGCTACTCGGGAGGCTGAGGCAAAAGAATTGCTTGAATCTGGGAGGCGGAGGTTGTGGTG
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CTAGAAATTCTTGTCATTTTTGGCTGGGA
Sequence 1482
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ACAAGTCTCGGGCCCCACCCCGCAGAGCCCCTCATTCTCTAGTTCTGGGTTGGGGCCCAG
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TGACTGNGACGACTGAGAAAATGCATGTATGTAAAGTCTGCANCTGGTGACATTGTACAC
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Sequence 1483
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CCTCTTTGAAGTGGGTTTAATAATAAGTACCTGCCG
Sequence 1484
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TCTTCCGGCCACTGGAGTTAGGGTTTGAAACTCTGCAGCTGCCTATTGCACTTGTGAAAA
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AGCTTGGAGAACTTTCTGAACAGTCAATCTGTAAAGGTGTCTGCAATCCCAAGGCCAATG
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CTCCAACAGCATCCTT
Sequence 1485
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TTTTGTAGATGATAGCA
Sequence 1486

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AGGTACATGACATCCGACGAAATGAGACGCCACCTAATTGATTTCCGGGAGTCCGCACCA
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TGCTAAGTATTTACCAGGGGAGTGGGAAAAAGAGTTGAGCGGGATTCTCTTAGGCTATGA
GAGAGTCAGGCAGCCCCCAAGATAAAATAATGAACTAGAAAATCTGGAACCTTACTTCTC
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CG

Sequence 1487
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TTATTCTGAACCAGTATAAGTGACTGTGGTCTAGGTTACACAATTTCAAGAGATCCTGAT
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TTGTANGGTAAAATTATGGCACAGGACTTTTAAAATGAAGCTGTGAAAGTTTACAGTCCA
TAGAGAATAAAAATCTAGAAGTTT

Sequence 1488
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GTCAGTCTCACTAGCCTCTCTCCAGACACACCAGCCTTTTTCTACCTTTCCAACATCCCA
AGTTCCTTTTCTCTTACAGGACTACATACACTCTCTCTTCTGCCAGAAACCATGTTCTAC
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CCACTGAACCCCAAGCCTGGGGTTCACAGCACCTGTCTCCATAACTACATAATAATCTCT
CTGATGTTTAGGCTGGGCATGGTGGCTCACGCCTGTAATGCCAGCACTTTGGGAGGCCAA
GGCG

Sequence 1489
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GGATGGGTTTTAACTACAGACCCAGTCTCTGCCAATATTGTCCTTGTGAACTTCCTTGAA
GATGGCAGCATGTCTGTGACCGGAATTATGGGACATGCTGTGCAGACTGTTGAAACTATG
A

Sequence 1490
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GATGTAACTGAAGAAGACAGTNNGAGCNNCAAGGAGGGACAACCACGACCTATGAGGACA
CCATGCCAGAGAGGCCTGGACCCCACGCTAGGCTCAGTGCCTGTTATACTCTTGGGACCC
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AAATTTTTTTTTTNAAANTTT

Sequence 1491
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GCGCCTTAGTTCTTAGGGCTGGGTATTAGTTCATTTTCACACTGCTGATAAAGACATACT
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Sequence 1492
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GCCATTTAAATTTAGTCTATTAAAAACAAACCTAGAGGTCTTGGTGCAGTTGATTTCAGA
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TGTGAACAAATTAGA
Sequence 1493
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GCCTCTGTCCAGGAGGNANGGGCCCAGCTCGATGATGCCATGGGTCAGTTTGCTCAGCTC
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GGTGTCCACGCCGGTGGCTGNCCCACGTTTTTCAGGCCTGAGCAAGGTCAGTNTGCAGCC
AGAGTACCTT
Sequence 1494
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TTATATCCCTGACTGCTTTCCACTAAATGTCAGTGGTGACCCCAATCCAATTATTATGAC
AACTGAACATGCTTATGCATCCCTCATGCCTTTATTTTTTTATTTTGGGAAATCTTTCAGC
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AACAGTCTCCTTGGTTCAGATTACTGTTTTTTTGACTAGAGCTTCTCGCTTCAGATTCTGT
CATAAGATTATGGCTTAACCTATGGTTGTCCTTTGATTTGGTGCCATATGAAATAAAACA
TTATTT
Sequence 1495
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CCCC
Sequence 1496
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Sequence 1497
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GAAGTCCTAAAGCCAGGAATGAGGAAGGCTGTGAATGTNCATTGTTCCATGCAAGAATGA
CTCTGGNGNGGGCTATTTAGAGATCATGAGGGATACTGCCCCAGTTTCCACAGGCCAGAT
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CACCGCCCAGGGGGTCCTGGAGAGGACAGTATAGGACCAAAGAGGAT
Sequence 1498

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CACCGNGGTGGCGCCCGAGGTACTTGGCCAAGCGCTCAGATCGGCAAGGGGCACCAAGTC
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NNNAAAAAANATTTTTTTNTCTTCNCNGGGGGGGGNCNNTTTTATAAAAAAAAANGANNANACC
CCCCCNCCGTGGNGGAGAAAATTNTTTTANATTATTTTTTTTTCNTCCCCCCCCCGGGCCT
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Sequence 1499
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CATGTTCTTTTGCTGTTTTGTGCTTTGCCGATTTTGGATTTTATTTTTCACAAAATTTTT
ATTTAAAAAAACTCGTCACCTTTTGGAAATGCCCATTGCCGACTTGAATTTTTTTTGTATGA
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GTACCT
Sequence 1500
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TTTTCANAAGACCCTAAAAAATTNTTTTCCCAAAAACAAAAGNGNTTTNTTTTTNTTTNG
GGNGGGACCCCCTTCCTTTTGGGNNTTTTNCCTTCCCCCCT
Sequence 1501
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Sequence 1502
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NNNNATTTNNNAAAAAGNGGGGGGGGGGGGGGGGGGGGGGGTTNCTTTCNNTTTNNANTAT
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CNTCTTNTTTATAAAANAAAAAAA
Sequence 1503
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ACGATGGACTCCGTGTTGGTCACTGTCAAGGCATTGTTCTCCTCCAATTTGGACCCCAGC
CTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATGCCTCATTCCATTGGCTGGGCTCC
ACCTACCAGTTGGTGGACATCCATGTGACAGAAATGGAGTCATCAGTTTATCAACCAACA
AGCAGCTCCAGCACCCAGCACTTCTACCTGAATTTCACCATCACCAACCTACCATATTCC
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GCGCTCAACCAACTCTTCGAAACAGC
Sequence 1504
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TTTTAAAAAAAAAGGAAANCCCCCCGCNNCGGGAAAANTTTNTNANAANTTTTTTTCCCC
CCCCCCCNCGGGGGGGGGGGCCCGGCCNCNNTTTTTTTTTTTTTTTTTTT
Sequence 1505
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Sequence 1506
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GTTTTCCGTCTTCACATCAAAGCATTTCATGCCCGTCAGCAACTTTTTAATGCATTTGCT
CCTCGTTTGCACAATTTCCATTTAAAGACTTTCCTTGGCTGACTTCTCTGATGAGGTTTC
CTGCTTGCCAGGAGAGCACGCTAATGCAGAAATTACAAAGGGGGCTTCACGTCCCTTTTC
CGGAGGACCTGATATTTCAGATAATTTCCAGCTTCAGTTTTGGAGAAACGACTGTTCTTT
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Sequence 1507
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TCTTCCAAATCTGCCCATGACATCAACCTNTGCTGCGTAATCGGACCTGCACCCAACCCA
GGTTT
Sequence 1508
CCGCGGTGGCGGCCGAGGTACGCGGGAGAACAGCTCAGAAGGAGACCCACAGTGAGCAGC
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CTGGAGAGGGTGACTCCTCTCAGCTCTCAGCAGAGAAGCAGCCCTGGAGAAGGTAGCTTC
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GCTTCTATCCATAGGCAGG
Sequence 1509

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ACCTCTTATGTCAAAAATGTTGTATCAGGTGGCTTCCCCATCATCAGAGACCAAATTTTC
AGATATGTTCACGATCCAGAATGTGTAGCAACAACTGGG
Sequence 1510
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TTCTGGAGGGAAAGAAAACAGTTCATATACAGNGAATCAGGAATTACAATTGCATCAGAC
TTATCAACAGCATCGGGAAGATAATGNGAAAATACCTTCAAAACTCTNGAGGGACACAAG
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Sequence 1511
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Sequence 1512
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Sequence 1514
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Sequence 1515
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TGGACTGCATAAAGATTGGTATGGCCTTAGCTCTTAGCCAAACACCTTCCTGACACCATG
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Sequence 1516
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Sequence 1527
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Sequence 1550
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CCTCA
Sequence 1551
GGCGGCCGCTCTAGAACTAGNGGANCCNTTTTGCGGGGGGGAAAAAAAACCCCAAGCCCANC
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CACNTTTTTNNTTTNNCNGACGAGCCGGGNGCANAACCCCCAAANANA
Sequence 1552
CCGGGCAGGTACGCGGGCTGCCTGGGGATGGCAGCCGCGTGCGTTCCCTGTGCTGTCCTG
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TTTCGAGGTTGGGAGAGGAAGCTCAGGGATGGAACTGACTAAACATATGTGAGATGTTTC
CTTGTTTGCTGCTCATGGAGGTTTCATTTCTGAAGTCTTTTCTTGGGAGGGAAAAGGATG
TGTGGATATATGAGGTGACTCTAGAACCCTCATTTTATGGATGAAGAAACTGTGATTCAC
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TACCTCGGCC
Sequence 1553
TACTATAGGGCNATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACATTTCCATG
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GATAATGAGCCCTACAAA
Sequence 1554
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Sequence 1555
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AGGTCTTTTTAG
Sequence 1556
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TTGAACATATACTGCAGGCTTCCTGGGGAGGAGATGACCACGATNAGCCCCTGGCCAGCT
GGTACCT
Sequence 1557
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TAAAATCTATGACT
Sequence 1558
CCGCGGTGGCGGCCGGGGGCCATTGAGACTGCCATGGAAGACTTGAAAGGTCACGTAGCT
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ACTTCATCATGCTGAGTTGTGTGCAGCTGCAGCGGATTCCTCTGAGCGCTGTCTATCGCA
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TCCTTGAAATTTGCAAGTTGTCTGGGTTCATG
Sequence 1559
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCTCCAGGCACAGCTAA
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TTGGCCTCAAGTGATCCTCCAGCCATGAGCCACTGTAAATGTCTGGGAATGCCAACTTGA
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CAGAATTAAATTGGAGGATACCGCAGTTAGTGTCTGCTGCAGAACTGATTGCTTGCTTGC
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TACTGNGTTTNGTTGGTTTTTCATGTGAAGAGCAGAGGGAAAAGCAAGGGA
Sequence 1560
GGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTACTGACCCAACAACTGTGACTA
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TTTTTCAAAGGGGACCTACTGTAGCCCCTTTTAAT
Sequence 1561
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ACTGTCCTTTCTGGGGCGTGTGATGGAGAGGTTAGAATTTGGAATCTAACTCAGCGGAAT
TGTATCCGTTACCT
Sequence 1562
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GCTTCCTTGTTTAACCTGGTCCCTGTTTCAGGAGAGAAGCCTCATCAGTGCCAAGTCTGT
GGGGAAGACCTTCTCTCAGAGTGGAAGCAGGAATGTGCATATGAGAAAGCATCACCTGCA
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AGTTTGCTTG
Sequence 1563
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CTTTGTCCAGCTGCAGGTGCCTGCAGGTCACACTGGCTAACTACTTTGTGATGGGCTCTT
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AGTCAGGACTGGTTTTATCAGCAGTTTGATCTTCTGAGGTCTGGTATGTAGTTTGCTGGC
CCACAGAACCTTCACGTGTATTCACAGCCTCAATGCCATAAGGAAACTCTTTTAGAAGTT
CTGACAGCTGGTCATGTAGGTATAAGACAGGTGCCTTATCACTGTGGATTTCATTTCTTG
Sequence 1564
CCGCGGTGGCGGCCGAGGTACAAATTGTCGTTTTTATTCCTCTTATTGGGATATCATTTT
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TATTCCCCTCGCTGTTGGAGCAAACCTTATACCTTACTTCCAGCAAGCAAAGTGCTTTGA
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ATATAGAAAGTTGATATTCAACCTCACAAGGGCTCTCAAAGTATAATCTTTCTATAGCCA
ACTGCTAATGCAAATTAAAACATATTTCATTTTAACATGATTTCAAAATCAGTTTTTCAT
ACTACCCTTTGCTGGAAGAAACTAAAAATATAGCAAATGCAGAACCACAAACAATTCGAA
TGGGGTAGAAACATTGTAAATATTTACTCTTTGCAAACCCTGGTGGGTATTTTATTTTGG
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TCTAGAACTAGTGGAATCCCCCNGGC
Sequence 1565
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Sequence 1566
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Sequence 1567
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CA
Sequence 1568
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AAGTGAGCTGGG
Sequence 1569
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CGGATCCGGCTCCACTGGGCAGGGCAGACCCTAGCCATCCTCTGTGCAGCTCTGGGCCTG
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ATGGTTCCAGGCCCAGATCAAAGGTGCGGCCTGGTACCTGTGCCTG
Sequence 1570
CGTCCGCTAAGTTCCAATATTGAAAAATCTGTAAAAGACCTCCAGCGCTGCACAGTGTCT
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CTTCTAAAGAAGATGACTCATGTGGCTGTTCAAATGTCAGAGCAGCAA
Sequence 1571
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GGCTGCAGC
Sequence 1572
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Sequence 1573
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Sequence 1574
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Sequence 1575
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GATACAATCAAGC
Sequence 1576
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Sequence 1577

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Sequence 1578

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Sequence 1579

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AGCTTCACAGCTTCACTTAAAAATGGGGGTGCGGAACATTAGTTAGTTGGTAGGGTAATG
GCCTACCAAGACGATGATGTTTAGCCGGGCCGAGAGGCTGTACCT
Sequence 1580

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CAATAGTTATCCCAGTCTTAAAGGTAGGTTAGGTACCTGCCCG
Sequence 1581

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Sequence 1582

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TAAAGGTAGGTTAGGTACCTGCCCG
Sequence 1583

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CCTTTCTATTACTCATCATGCGATAAATAACTATATCCGGTATTAGCTATTGTTTCCAAT
AGTTATCCCAGTCTTAAAGGTAGGTTAGGTACCTGCCCG
Sequence 1584

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AACTTTG
Sequence 1585

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AAAGGTAGGTTAGGTACCTGCCCGG
Sequence 1586
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GGCTTTCCTTTTAAGGGNTCCCGATTTAAGTGGCTTTANCNGGNAACCTTNGAACCCCCA
AAA
Sequence 1587
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Sequence 1588
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Sequence 1589
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CTGAAGACCTGGCTTGGGGTCA
Sequence 1590
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TGGTTCTTCAGCCTTGCTCCTTC
Sequence 1591
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CCACCGTAAGATTCATATAATCTAATCAAAGATCTACCAACTGGTTGTTTTACCCTGGAT
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GGTGGGTTAACTTGCATTA

Sequence 1592
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Sequence 1593
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GACCT

Sequence 1594
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Sequence 1595
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Sequence 1596
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ATGTACCT

Sequence 1597
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Sequence 1598
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Sequence 1599
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Sequence 1600
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Sequence 1604
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Sequence 1605
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Sequence 1606
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Sequence 1611
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GTCTGCCACATCTTTGCATTCTTCAATGATACCTTTGTCCATGTTANTGAACTTTCTGGC
NAGTGAGTACTTCAGAAAGGCATNAAACANGCCTCAAAGGGAC
Sequence 1612
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AGC
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Sequence 1618
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CTGGCTTGGGC
Sequence 1619

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Sequence 1620
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Sequence 1621
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Sequence 1623
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Sequence 1624
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Sequence 1625
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Sequence 1626
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Sequence 1627
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Sequence 1628
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Sequence 1629
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Sequence 1630
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CCTAA
Sequence 1631
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CGCGCGGGGGGGTCGTGCCTGG
Sequence 1632
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Sequence 1633
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Sequence 1634
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Sequence 1635
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N
Sequence 1636
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Sequence 1637
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Sequence 1638
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Sequence 1639
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Sequence 1640
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Sequence 1642
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Sequence 1643
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Sequence 1644
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CAGAC
Sequence 1645
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GTGCTAGGAAGCTGAC
Sequence 1646
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Sequence 1647
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Sequence 1648
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Sequence 1649
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TTTCCCACCCNGGAT
Sequence 1650
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ATT

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Sequence 1655
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Sequence 1656
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Sequence 1659
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Sequence 1660
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Sequence 1661
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Sequence 1662
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Sequence 1663
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Sequence 1665

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Sequence 1666
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Sequence 1667
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Sequence 1668
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Sequence 1669
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A
Sequence 1670
CGACCNCGCGTCCGGTCTGAAGGGTCTGGCTGGTGAGCCAGGTTTTAAAGGCAGCCGAGG
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AGAGAAAGGAGATGAAGGGCCTATGGGGCTGAAAGGATACCTGGGCGCAAAAGGTATCCA
AGGAATGCCAGGCATCCCAGGGCTGTCAGGAATCCCTGGGCTGCCTGGGAGGCCCGGCCA

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CATCAAAGGAGTCAAGGGAGACATCGGAGTCCCCGGCATCCCCGGTTTGCCAGGATTCCC
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CAAAGGTGCCCCAGGGAGAGCAGGCCTGTATGGCGAGATTGGCNCGACTGGTGATTTCGG
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CACTGGAATACCAGGTCTGAAGGGATTCTTTGGAGAGAAG
Sequence 1671
GAGTCGACCNCGCGTCCGCAACTGGTGTCCAGCTCGGTGCACTCCAAGCGCCGTTCCCGA
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GTTGGCCGGGCCGGAGACGCCTTTGGGGACACCTCCTTCCTCAATAGCAAGGCTGGCGAG
CCCGACGGCGAGTCCTTGGACGAACAGCCCTCTTCTTCATCTTCCAAACGCAGTCTCCTG
TCCAGGAAGTTCCGGGGCAGCAAGCGGTCACAGTCGGTGACCAGGGGGGAGCGGGAGCAG
CGTGACATGCTGGGCTCCCTGCGGGACTCGGCCCTGTTTGTCAAGAATGCCATGTCCCTG
CCCCAGCTCAATGAGAAGGAGGCCGCGGAGAAGGGCACCAGTAAGCTGCCCAAGAGCCTG
TCATCCAGCCCCGTGAAGAAGGCCAATGACGGGGGAGGGCGGCGATGAGGAGGCGGGCAC
GGAGGAAGGCAGTGCCCCGTCGGAAT
Sequence 1672
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GGACGTCCTGGCTCGCCTGCGGTGAGTCCCCACTGTAGCGGTCCTGCCGGNTTNCCCCTC
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CTTCCAGATGGCAGGGGAGGTGGC
Sequence 1673
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GGTGGGCGGATCACTTGAGGTCGGGAGTTCAGGACCAGCCTGGCCAGCGTGGCGAAACCC
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Sequence 1674
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Sequence 1675
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GGGACATGGGCGGCTTTGCCATTCTGGTGCAAGAAGGCCA
Sequence 1676
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Sequence 1677
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Sequence 1678
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Sequence 1679
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ACTTGGAAGCAGTGGAT
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TATA
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CGGCAAAGGCGCTGCTGCCTCAAGCTTGCTTTACATGCCTCTCTAGTTCCTCTCGCACTA
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Sequence 1682
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GAACTAGAGAGAGGCAGGCGTGTGTGTGGACAAGCGCTGGAGCCGCAGCCCTCAGACTGG
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A

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TTTTTTTTTAAAGAATC

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GACTGGGAACAATGGAAAAAATTACATTAGCTGTGGTTGTAAAGTTTTTTTGTTTTTGGT
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Sequence 1687
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CCCCACTCCCCCTTGGGTGGGCCTTGAACTTNCCACTTCCCTTGGGTGGGGCCC
Sequence 1688
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CGCGCCCCTGTGCGTCCC
Sequence 1689
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Sequence 1691
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C
Sequence 1692
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ATGAATGTGGGTCTTTTCT

Sequence 1693
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TTCGGG

Sequence 1694
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TCCATAGGGCCAGGTGGTACGG

Sequence 1695
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Sequence 1696
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Sequence 1697
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GTTC
Sequence 1698
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Sequence 1699
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Sequence 1700
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TGGTTTGNTTTTTTTAAGAAAC
Sequence 1701
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Sequence 1703

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GC
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GGCTCCGAAGGGCCCTCCCAACCCGGGGA
Sequence 1705
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Sequence 1706 ,
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Sequence 1707
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Sequence 1708
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Sequence 1709
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Sequence 1713
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CCACGGCAGGGGCCACAGGGAAGACTTTCGCTTCTGCAGCCAGCGGAACCAGACACACAG
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Sequence 1714
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Sequence 1715
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Sequence 1718
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Sequence 1719

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Sequence 1720
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Sequence 1723
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Sequence 1725

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Sequence 1726
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Sequence 1727
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Sequence 1732
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Sequence 1733
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Sequence 1735
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GCCCAGTCCGACACAACCTGCAAAAATCCATTAGAGCCACTGCCCCCAGAGATG
Sequence 1736
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Sequence 1737
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Sequence 1738
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Sequence 1739
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Sequence 1740
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GGAGCT
Sequence 1741
CANCGCCCCGGCCCGNTCAAGCAGCNTAATAAAGCTCATANAGGCGGACNGGCATCNGGG
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GAAGGTGTGAAAAGAAACTTNAGCNGANNCGACCNGAGGCATCNNCGCCAGCCAGCTCCG
AAAGCAGAAGANGGAGGCGGTTCTGGCATGAGAAAGANACAGCTGGGCTGGCNAGGATAG
GCCCCTCCTTCATCAAGGTACTGGTGGTGCCCCTGCACAGNANAATTNTNCCTGCCAGAG
GCCATGCANCCTGCTTCAAGATAGGGACACTGGAACAGATACACTTGAATGAATTGGGGA
AACACCCCAGAACTTTT
Sequence 1742
CACGCGTCCGTTTTTTTNCAAGGGTCTATTGTTTCGATTAGTTTCCTTGCAGGAGGTAGAA
GGTTTCCTCCATCCCGAGTAATTCATAGAGTGTTTGGCTTGNCTACCTTCCTCCTGACTG
AAGTCACCTGATACTTTTTGTTTTTTTCAAGAAGGAAGAGAGAACCCTGTTGCCTCAGTTA
CTAGCAATGATACAATTCTCAAAATCTGGTCTTTTTTTGTTTCTTTGAAATAGTTTCTCC
ATGTTGTGTGACACAGCAGCCCCTGTCTTATCATAGTTGTCTTCCCTCCACCACCTGTAC
CAGAGATGTTGGATATGTTGGAGGTGAAGGTGTGCAAGGTTTTTAACTAACTGTTCTAAT
TAAAGGATTCTGCAGGAAAGAACATGGGTTTACAAAAGAGAAGCTTTTGTATTATTAGTA
ATTTTTTTTCTTTGATGAATTTATGTGCTTAGTTTGGAGAATCGAGAGTTGGCTGGGAAA
AGATTTCTGAGGAGTTAAGGGACTCTGGTGCTGTTTGGGAA
Sequence 1743
GTGATTAGAAGTAAGCGNTGATGAGGCTGAAGAAAAGGAAGACAAAACTGAGTACTTGGA
GGAACGAAGAGTAATGGGATATCCAATAAACTGAGAATGTTTCTTCACAATCTCCTTTAT
TCTTCGTTCCTCCAAGTACTCAGTTTGGTCTTCTTTCAGGTGTAGGAACGTGATAAAGAA

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GTAAGCGATGATGAGGCTGAAGAAAAGGAAGACAAAGAAGAAGAAAAAAAAAAAAAAAAGG

Sequence 1744
CGATTTCTTTGTTGGACAACCCAGCTGGGGCTAGGAATGGTTCAGAAGGTTTAAGGCCGG
AANGGGNAATGAAGGGGCCCGGCGCTAACCCTCTAGGGACCTGTTTTGCTTCTGTTTAAA
CCAAATGGGCAGTCTGTCATTACACACACCCTGNGTCTTCATATGTGGCTCGCCAGTATA
ATGGAATGTGCTTACAAGGGCCAGCAGGAGTGCCTGGTCGAGACGGGAGCCCTGGGGCCA
ATGGCATTCCGGGTACACCTGGGATCCCAGGTCGGGATGGATTCAAAGGAGAAAAGGGGG
AATGTCTGAGGGAAAGCTTTNAGGAGTCCTGGACACCCAACTACAAGCAGTGTTCATGGA
GTTCATTGAATTATGGCATANATCTTGGGAAAANTGCGGAGTGTACATTTACAAANATGC
TTTTCAAATAGTTGCTNTAANANTTTTGTTCAG
Sequence 1745
GGACGCGTGGGTGGAAATGTAAACAAGAATAGACTGTTCATTCCTGATGGCTTTTAGTCT
ATACTAACATATTGTTTGTCATGGCATCCGAGACTGAAAAGACCCATGCTTTACTGCAGA
CTTGTAGCACTGAATCTCTTATTTCCAGCCTTGGGTCTGGGGGCATTTTGCCTCGTAGCT
GACAGACTTCTTCAGTTTTCCACAATTCAGCAAAATGACTGGCTTCGTGCTCTCTCAGAT
AATGCAGTACATTGTGTAATTGGCATGTGGTCATGGGCGGTAGTCACTGGAATCAAGAAG
AAGACTGACTTTGGAGAAATCATTTTAGCTGGATTTTTAGCCTCTGTTATTGATGTAGAC
CACTTTTTTCTAGCTGGATCCATGTCTTTAAAGGCTGCTTTGACTCTCCCGCGAAGACCT
TTCCTTCACTGTTCTACTGTGATTCCCGTTGTGGTTCTGACCCTGAAATTTACTATGCAC
CTTTTTCAAGCTCAAAGACTCATGGTGCTTTCTTCTGGGATGGTATTTATATCC
Sequence 1746
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AAGTGGAATATGATACAACTGTTATTTTCAGAACATATTTCTTTAGGGCTATTTAAAATA
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TGTTTATGACTTCTACAGTTTCCTGTATCTAGTGTTAAGTTGTAAGGAAAAACTAAACAT
GCAATTTAAAGGTAAACTTGATAACTATTTATGGAACATAAGCATACACCAATGGTTATT
TCTCACAGTTTTCATGCGCATTTGTTTATTGTTTACTTGGATTAGGCTCATTAAAAACCA
TAATGCTGGTCACAATTAGAATGCTAATATTTGGGGAAGCTATGCAGAAAATATTT
Sequence 1747
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TCCACATCCAGCAAAAATCAAAAACGAAGGAGAAATCTGTTGCATGTGAGCTGAATAGAA
TTTGTATTCTGCTGTTGTTGGATTGAAGTATTCTTTAAATGTCAATTANATCAATTTG
Sequence 1748
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Sequence 1749

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GCCCNTCCCGACCCTCCAGCTCATGGTGTCTGGGGCCTGCGGCTAGACTCTTGGAACATT
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CCTCATCACAGCCACCCCCACCACGAGTGTCTCCCCAGTGCAGACTCAAGTTATGCTTGA
AATGAAAAAGTCTATCTGGTAGTGGGTAAACGTAGACCTGGCACTGTTCCACGCGGGCGC
CCCAAGCCTGCCACTCCTGTGTCCCTGCCTCCCTGGGCTCCCGAGATAGGCACCACTGTA
TCCTCCAGCTCCTTCCTTCCTTCCCCCAGGAACACGGAGGCCACCGAGGGGGCTGGGCCT
ATCAGGAGGACACAGGCTGCAGCCTGGCACCCACCCCTCCATCTTCACCCCACATGGAAG
ACTTGTCTTCAAC
Sequence 1750   -
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TTATCTCTAAGTATATTTGAAGTGATTGCTGNTTATATGTTGTCATTTTAAAATTGTGTG
TCAGTAAAGCTACCTGTAAAATTTCAGTCCAAAAAAAATAAAGCTCTCAGGGAGACATGA
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TTTTTTTTGGCTTTGCTTTATTTATTTGGAGT
Sequence 1751
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GAATTTAGGATTGCTCTTTGGATTTGCCATTATGCTGGTGATTGCCCTCTATGAAGATAA
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TGGCTTGCACTACTTACAAGTTTCATAGATTTGAGCCTAACCACAAGAGGCTGGTGCTTA
GTACTGTTTTCCCTGCACGTAGGGGTCTTTTAAAAATATAAAGCTTGTGATAAAGAGAGG
A
Sequence 1752
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AGCCTCCGAGACCACTACCCTCAGCCCAGAGGCCACCACCTTTAATGACACCAGAATCCC
TGATGCAGCTGGTGGCACGGCCGGCGTGGGTACCATGCTTCTGTCCTTTGGGATCATCAC
GGTGATAGGCCTGGCTGTGGCCTTGGTTTTGTACATCAGGAAGAAGAAGAGGCTGGAGAA
GCTACGCCACCAGCTCATGCCCATGTACAACTTCGACCCCACGGAGGAACAAGATGAGTT
GGAGCAGGAGCTGCTGGAGCATGGGCGGGACGCCGCCTCTGTACAGGCTGCTACTTCTGT
GCAGGCCATGCAGGGCAAGACTACTCTGCCCTCCCAGGGCCCACTCCAGAGACCCAGCCG
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Sequence 1753
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NCGCAAGAAGGGTTCCTTGGCAAGAAACAAACCCGG
Sequence 1755
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GACAACGGCTCCGGCATGTGCANGGCCGGCTACGCGGGCGANGATGCCCCNCGGNCCGTT
TTCCCTCATCGTGGGGCGCCCCANGCNCCAGNTGCGTGATGGTGGGCATGGGTCAGAAGG
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ATCAGAGCACGGCATNTNTCACCAACTGGGACCGACATTGGAGAAAATCTGGCACCACAC
CTTTCTACAATGAGCTGCGTGTGGCTCCCGAGGAGCACCCCGTGCTGCTTGACCGAGGCC
CCCCTGAACCCCCAANGNCAACCCGNCGAGAANGATNACCCCAGATNCATGTTTTGAGGA
CCCTTTTCAACACCCCCAAGCCCATGGTTACCGTTTGCCT
Sequence 1756
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Sequence 1757
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GAGGCTGGTTCCAGACTCTGAAGACTGCCTGGGGCCAGCAGCCTGATTTTAGCANCTAAT
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Sequence 1758
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AAGTA
Sequence 1759
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TCCCAGGCGACCCGGAGGTAGCATTTCCCAGGAGGCACGGGCCCCCCCAGGGGGATGGGC
ACAGCCACGCCAGATGGACGAGAAGACCAAGAAAGCAGAGGAAATGGCCCTGAGCCTCAC
CCGAGCAGTGGCGGGCGGGGATGAACAGGTGGCAATGAAGTGTGCCATCTGGCTGGCAGA
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GAAGGGAAGA

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Sequence 1760
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ACACTCCCTGCCACTGTTCTGCGCTTTAATTGTGGGAGAAGAGAGGAGAGGAGGGCTCAG
CGGTGGGGCAGCCTGTCCGGGGCGCTGACCCACCATCACCCTGCTCTGCCCAGCCTCGCG
TGACCTCAGAGAGGTGGGGATAGGGGACACCTTCAGCCTCCAGCATGTGTGGCCACTTGT
ACCCCCACCCACCCTTGGGGGAGCATGATGGGCAGGTTGAGGGGCAGGATGGAGACCAAG
GGGAANTCAGTGAGCAGNAGGCCCTGGGGAAGTGTCCGGTCGGGGTTGGACTTGAGGGAC
AGAGGGGCCCAACACTTTCTTGCCCCTTTTG
Sequence 1761
CCGCCAGGCCCACCATCACCACCGCCTCTGGCCGNCACCCCCATCTTNCACCTGTGCCCT
CACCACCACACTACACAGCACACCAGCCGCTGNAGGGCTCCCATGGGCTGAGTGGGGAAG
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TGCCCTCCTGGACAAGGCTAACATNCCACTTAGCCAGCACCCTGCACCTGCTGACGTCCC
CACNTCCCTTGGTTGGTGGGGACATTGCTTCTCTGGGGCTTTTTGGAATTGGGGGGCGCC
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Sequence 1762
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TGGTGAAAGCGGGGCCGTGAGGGGGGCAGGNGCCGGGAGCCGGACCCGCAGTAGCGGCAG
CAGCGGCGCCGCCTCCCAGAGTTCAGACCCAGGAAGCGGCCGGGAGGGCAGGAGCGAATC
GGGCCGCCGCCGCCATGGAGCTGAGAGTCGGGAACAGGTACCGGCTGGGCCGGAAGATCG
GCAGCGGCTCCTTCGGAGACATCTATCTCGGTACCGGACATTGCTGCAGGAGAAGAGGTT
GCCA
Sequence 1763
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TTCNTGGTTCCTTTTTTGGTTT
Sequence 1764
AGTCGACCCCGCGTCCGCGGACGCGTGGGCGGACGCGTGGGGGCCCTCCGGGAAGATGGC
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TAGGGGGTCCCTGCGCAAAACCTCCTGGGCAGAGTGGGGTCACAGGGAACTGCGACTGGG
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GCTCAGTGAGAAACAGCTAAGCCAAGCCACTGCTGCTGCCACCAACCACACCACTGATAA
TGGTGTGGGTCCTGAGGAAGAGAGCCGTGGACCCAAATCAATACTACAAAATCCCGCAGT
CAAGCAATTCATCAGCTGAAGGTCAATGGGGAA
Sequence 1765
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TCTGTGTGCTTGTGAAAGTGTCCAGGCGTGTGCACAGCCAGTGCGCCCACTTCCGGGCTC
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T

Sequence 1766

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TGCAGGAGAGCCTGGCCCAGGCGCGGCTGGGCTCTCGACGCCCTGCGCGCCTGCTGATGC
CTAGCCAGTTGGTAAGCCAGGTGGGCAAAGAACTACTGCGCCTGGCCTACAGCGAGCCGT
GCGGCCTGCGGGGGGCGCTGCTGGACGTCTGCGTGGAGCAGGGCAAGAGCTGCCACAGCG
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CGCCTGGACTCACGACTCTGGCCCAAGAT

Sequence 1767

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GCAATGATTAATGCTGCAAAATGTATGGTTATGTTACCGTATATTCACAAAAGAAATATT
ATTACAAGGTTTCAGAGGTAGCCAATTGCATTCTTTTGGAAATTTACTGTACTGTTTCAA
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TATATTTTTCATTATGATATCTACTGTATGCTATTGTGATAGTTTTATGAAATGCTTACA
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T

Sequence 1768

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Sequence 1769

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AAAAAAAAGG

Sequence 1770

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TTCTTCACTAACTTCTCTTTCTGTGGCACCAACATTCAGC

Sequence 1771

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CGCCGGAGGCCAGGGCTGGGGCGGCACCGCGCAGCGGCCACGGGGTCCCGTTAGAGCAGC
GCCCGGCGGCTATGCCGAGAGCCCGGAGCGGCCGGAGGAGCAGAGGGGCCGNCGGGAGGG

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AGGAAACCTTTCTGCGAGTACGAGCCAACCGGCAGACCCGACTGAATGCTCGGATTGGGA
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AGAAGCGGATACGGGCCACCACTCTCCTGGAAGGTGGCTTCCGAGGCTCTGGCT
Sequence 1772
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AAACCCTGGTTGCCTNTTTTTGGCA
Sequence 1773
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CTGCAGAGCGGTAGAGGTGTATATTTTTCATACTGTGGGGCAAAGTATTTGTGCTGCTTT
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CTGTAGAAGGTGCCACAGTGAGACCTGGAG
Sequence 1774
CCCCGCGTCCGCTTCCGGTTGCTAACGGTTCCCAAACAGCCCCCGAAAACGCTACGTGAG
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AAACTCCTGGGCTCAAGTGATCTTCTCGCCTCAGCCTCCTGAGTAGCTGGAGCTACAGGT
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Sequence 1775
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GGGTTGGAGCCCCCAAACAGAGTCCTTAGTGGGGTGCTGCCTAGTGGAGCTGTGAGAAGA
GGGCCATCATCCTCCAGACCCCAGAATGGTAGATCCACTGACAGCTTGAACTGTGCACCT
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Sequence 1776
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ACGTTTCTGTTTATTANGCTAAATTGTTCCTCAGGTGTGTGTNTATATATATACATATAT
ATATATATATATATGTATATATATACACATATATACGTATATATACATATATATGTAT
ATGGAGTCTCGCTCTGTTGCCCAGGCTGGAGTGCAGTGGCACGATCCCAGCTCACTGCAA
CCTCCGCCTCCCGGGTTCGGGCGATTCTTCTGCCTCAGCCTCCCTGGTAGCTGGGGCTGC
AGCCATGTGCCACCAAGCCCAGCTAATTTGTATTTTTTGGTGGGAGACAGGGTTTCACCAT
GTTGGTGAGGCTGGTCTGGAACTGACCTCAAGTGATCTGCCCACCTCGGCCTCCCAAGGT
GTTGGGATTAACAGGTGTGAAGCCACCACGCCTGTCCCAGTATATTGTTTAACAAGTTTA
TTTTTGGGTGAAAAATTCTCTTTAATGGGAAGA

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Sequence 1777
CCACGCGTCCGGCGCCCCCTCCCGGCCGCCATGTTGGCTGGTGTGTGGGTGTCAAACTGA
GCCAGACGCGGCGGTGGCGGCGGCTCCGCGGGCTACGGTCGCTCCCGCCTCTCGAGCGCT
GCCGGTGGCCGCAGCGGCGCACCCACGCCGGCCCGGAGGAGCAGAGTGCTAAGTGCTGGG
TGCTCACTGGTGATGAGGCAGATGAAGGTTACCAAACTTGTGGACAGGAGCCTCATATCA
GAGACGTGGACCTCACTGTAGCCTGGTCATGGCTTCCAGCTTTTCGAATCTGAGGCTCCA
AAGGAGGAAATGACCATTCAGGGATCTTACTCCAGCTTGATTACGGAGACTGAACCTTCA
TAGGGTGCGCACTTACCAAGGACAGGAAGGTTTCTCTGTTTGAAGGGCTTTAAACTTATA
ACAAAGAAAATAA
Sequence 1778
CGCGTCCGAGACAGTTCATACTGGAGACAAACCCTACAAATGTAATGAATGTGGCAAAAC
CTTTAAACGGAACTCAAGCCTCACTGCACATCATATAATCCATGCAGGAAAGAAACCATA
TACATGTGATGTATGTGGCAAGGTCTTTTATCAGAATTCACAACTTGTAAGGCACCAGAT
AATTCATACTGGAGAGACACCTTACAAATGTAATGAATGTGGCAAGGTCTTCTTTCAACG
TTCACGTCTTGCAGGGCACCGGAGAATTCATACTGGAGAGAAACCCTACAAATGTAATGA
ATGTGGCAAGGTCTTCAGTCAACATTCACATCTTGCAGTGCATCAGAGAGTTCATACTGG
AGAGAAACCTTACAAATGTAATGAATGTGGCAAAGCCTTTAATTG
Sequence 1779
NCCCCGCGTCCGCTGTTGGAGCAGTAGACTTCTCACATCTTTTTGTCACTTCATCGTTTG
ACTGGACAGTAAAGCTTTGGACAACTAAGAATAACAAGCCTTTGTATTCATTTGAAGATA
ATGCAGACTATGTTTATGATGTTATGTGGTCACCTACCCACCCAGCCCTGTTTGCCTGTG
TGGATGGCATGGGGAGATTGGATTTGTGGAATCTCAATAATGACACAGAGGTACCAACTG
CCAGCATTTCTGTGGAGGGTAATCCTGCTCTTAATCGTGTGAGATGGACCCATTCTGGCA
GAGAGATTGCTGTGGGTGATTCTGAAGGACAGATTGTTATATACCGATGTGGGAGAGATT
GCTGTTCCCCGCAATGATGAATGGGCACGGTTTGGCCGAACACTTGCAGAAATTAATGCA
AACCGAGCTGATGCAGAGGAGGAAGCAGCTACCCGAATCCTGCTTAGTTCCTGAAAAGGG
GAGTGTAACTAGTGGATTGGGAAAGGGTC
Sequence 1780
AGTAGGAACCAAGAAAACTTCTTTTGCCAACTTTACAGGATATCTGGTAAACTATTACAT
NGTCAGGCCAAACATGCTCCTTGCATTTTTTGTTGGCTGAATNTGGGTACAGAGTGGTTCT
ATACGATGGTAATAACCAACTTGNAATCAAAGGAAGNATTCCAACAGAAACAGATAGGAN
AANGTCTTGAGAAGATATATNAAGGAATNTGTCACTTGTCACACNATGCCCGATCACCGG
GACACAAATTCCTGCAAGAAGGGACCACACCGGACTCTATTTTCCTACAAGNGCAGGAAA
CCTTGTTCATTCTAAGCATGGTTTCTGNTTGCCCAGGTATTCAAAAAA
Sequence 1781
ACCCACGCGTCCGGCTGCGTTGGGCTTGCGTGCGGCTCGCTAAGACTATGGCGTCCGGGC
CTCATTCGACAGCTACTGCTGCCGCAGCCGNCTCATCGGCCGCNNCAAGCGCGGGCGGCT
CCAGCTCCGGGACGACGACCACGACNACNACCACGACGGGAGGGATC
Sequence 1782
CCGCGTNCGTTTGTGTTGAATGGNTTGTATACTTCTTTACACAACCTATCCATTACTTAA
GGAATCTGCTCTTATTCTTCTACAAACTGNTCNGGAACAAANTGATATCAGAAATTNGAT
AAAAGAACTTCGAAATGNTTGAAGGAGTNGAGGAAGNTCATTGAATTNCATGTTTGGCAA
CTTNGCTGGAAGCAGAATCATTTGCCACTG
Sequence 1783
GTCGACCCCGCGTCCGGGCCCGTCTACAAGGNTTGTAGATAAAATAGAAACATACCTTCC
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AAGCTTTACTGTCAAAGCAGGCTTTTGGTATGGGAAGAAAAATACTTATAAATACTNGTN
TTAATATTTGCTTTATTAAAATACATTTAAAATACAGCATTTTTAAATCTCTAAGCTCAA
CTTGAAGATATAAGAACAGTAAATTTGATAAAAATGAGAAATTACATTCCCATTTCTTTA
ACAATTTGTAAATTCCAATTATCCTGAACATTTAACACCATTTACATATTTTATTAATCA
CATTTTCTTAAACATTTGATAAGAGATTTAATATTTTTGATCCAACTACCA

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Sequence 1784
GCGTCCGCGGACGCGTGGGTGTGGAGCCTGTTACCTCCGCATTTGACACGAGTCTGCTGT
GAACCCCGCAACCTCCTCCCCACCTCCCATCTCTCCTTCCAGGCCCATCCCTGGCCCAGA
GCAGGAGGGAGGGAGGGACAGATGGCGGTGGGTTTTTGTATCTGAATTTGCTGTCTTGAA
CATAAAGAATCTATCTGCTGTTGAAAAAAAAAAAAAAAAAAAGGnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
nnnnTCACAAATAAAGCAnnnnnnnnnnnnnnnnnnnnnnnnnnnGTTTGTCCAAACTCATC
AATGGTATCTTATCAATGTCTNGGATCCCCCGGGTACCCGANGCTCGAATTTAATTTCCT
TTTTTC
Sequence 1785
ACGCGTCCGGCTTCGTTCTCCCGTCCCTCCCCGCGCCTTGGCGCGGGGGGTCGACTAGCC
AAGTGAGGCGGGAGGCGACTCGGACCTTTCCCTGCATTTCGTTTCGGCCAGTGCCGGGGG
CTACCCGCCCTGGGGCCTGGGATCCTTGGGGCCCGTGAGGCCCACTCTTAGCGGCCGGGG
CCTACCGCGGCCCGCCGCTGGCCCTCATGAGGCATAGCCTGACCAAGCTGCTGGCAGCCT
CGGGCAGCAACTCCCCAACCCGCAGTGAGAGCCCGGAGCCGGCTGCAACTTGTTCGCTGC
CCTCTGACCTGACCCGGGCTGCAGCGGGGGAGGAGGAGACGGCGGCGGCNCGGATCTCCC
GGCCGCAAGCAGCAGTTTGGCGACGAAGGAGAGTTGGAAGCCGGGAGGGGGGGAAGCCCG
CGGCGGCGTGGCCGTGCGCGCGCCCTCCCCCGAGGAGATGGAGGAGGAGGCGATCGCCAG
CCTTCCGGGGGGAAGAGACGGAAGGATATGGACTTTTTTTCTGGGCTGGA
Sequence 1786
ACGCGTCCGGCCAGGCAGTGATGGAATCCCGGGGGTCNGCAGGAGAGAAGGGTGAACCAGG
TCTACCAGGAAGAGGATTCCCAGGGTTTCCAGGGGCCAAAGGAGACAAAGGTTCAAAGGG
TGAGGTGGGTTTCCCAGGATTAGCCGGGGAGCCCAGGAATTCCTGGATCCAAAGGAGAGCA
AGGATTCATGGGTCCTCCGGGGCCCCAGGGACAGCCGGGGTTACCGGGATCCCCAGGCCA
TGCCACGGAGGGGCCCAAAGGAGACCGCGGACCTCAGGGCCAGCCTGGCCTGCCAGGACT
TCCGGGACCCATGGGGCCTCCAGGGCTTCCTGGGATTGATGGAGTTAAAGGTGACAAAGG
AAATCCAGGCTGGCCAGGAGCACCCGGTGTCCCAGGGCCCAAGGGAGACCCTGGATTCCA
GGGCATGCCTGGTATTGGTGGCTCTCCAGGAATCACAGGCTCTAAGGGTGATATGGGGCC
TCCAAGGAGTTCCAGGATTTCAAGGTCCAAAAGGTCTTCCTGGCCTCCAGGGAATTAAAG
GTGATCAAGGCGATCAAAGG
Sequence 1787
AAGCTATTGTCACACCTTTGAAACCAGTTGACAACACTTACTACAAAGAGGCAGAAAAAG
AAAATCTTGTGGAACAAGTCCATTCCGTCAAATGNTNGTTCTTCCCTGGAAGTTGAGGCA
GNCATATCAAGAAAAACTCCANCCCAGCCTCAGAGANAGATCTCTTAANGCTTTCTGCTC
AGAAGGATTTTGGAACAGAANAGAAAAGCATCATGGTAANAAATGAAAGCCAAGAGATGT
GCCCACTCCTGTTAATTCATTCGATTGAAAATTCATACCCCTTCTAAGAAAAAATGAAAA
GTTTTNTAAACAACAAAAAAGAAAGCCCNNNAGGCAAGGAAAGGGCANGTGCTTCATNAA
GNATACCTGNTGNAAAAANAGGAAATGGCATCTTCCNCCAAGAAGAAAAAGCCCAANGGGT
TTGTACCATACCTGGTGCNCTTTGTATGCNCACCCTGCCAAAGGCATAAAGGTTTTCTAA
AAAAAGTTACCTTGAGNGAAGCCAANGAAGCCTGGGAGAAAANAGTANTGNAAAAAAATGC
AAGCNAAAGAAGGNTGGGTGGGAAG
Sequence 1788
CCCCGCGTCCGAGCAAACATAAGAAACCTGAGTCATTTTGTCATTTAGAGTATTCTGATA
AAATCTCTTGAAAATACTGAAATCAAAAGGTTAATGATTTTTTTGTTCATTCTGATTTGTC
ATTTTATTATCTGTCTAGCAGAAAAATCAAATGGGTAAATTAGCACTTTAGACAGCCAAC
ATAGTGAAACCCTCATCTCTACTAAAAGTTGGCAATTAAATCTGAATTTACAGATACAGA
TAACAGTTTATCAGAAATCATATTTTTTCCTGAAGAAAATTTAAAATTAGGAGTTGTGGGC
CTGGTGCGGTGGCTTACGCCTGTAATCCCAGCACTTTGGGAGGCTGAGGTGAGCAGATCA
CTTGAGGTCAGGAGTTCGAGACCAGCATAGCCAACATAGTGAAACCCTCATCTCTACTAA
AAGTACAAAAATTAGCCAGGTGTGGTGGCCGTGTGCCTGTAGTCCCAGCTACTCGGGAGG

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CTGAGGCGGGAGAATCGTTTGGAACCCG
Sequence 1789
GACCACGCGTCCGGTCGGCGTCTGGGCCTCGTCCCCTTCTCTCTGTCTCCCTTGCCTCCC
CCATCACGTCCCCTGACACCGACACCCCATTGCTCCCACAGTCTCCCCAGNCTCCACTTT
GGTCCCCAGCGCTGTCTGCCCGAGGATTTGCCTGAAGGCTGCCCCCAACTCTGCACCCGC
CCCCCGAGGGCCACCGAGGACCATGACTAAGACAGATCCTGCCCCGATGGCCCCGCCACC
CCGAGGAGAGGAGGAAGAAGAGGAGGAGGAGGATGAACCCGTCCCCGAGGCCCCCAGCCC
CACCCAGGAGCGCCGGCAGAAGCCTGTTGTGCACCCCTCGGCACCTGCCCCCCTCCCTAA
GGACTACGCTTTCACCTTCTTCGATCCCAATGACCCGGCGTGCCAGGAGATCCTGTTTGA
CCCTCAGACCACCATCCCCGAGCTGTTTGCCATTGTGCGCCAGTGGGTGCCCCAA
Sequence 1790
CGGGGTCTTCTTGCTGTGAGGTCGCGTTCCCCAGTGTTACGGAGGGTCCTTGAGGCAAGG
AGTGAAAATTGGGTCTGGGGGGTTAGTCCTGGGGTGGAGGTCTGGGCACGCCGGGTCGGAC
CCCCTNCATCTTCGGNTTTGCACACCCCGCTTTCCAGCGCGGAGTCCGCGGCGGGTAGGG
CNGGCGTCNCGTGCGTGACGTCATCCAGCGGCGCCTNGCGAGGCTNCAGTGGCCTTGACC
TCCCGCGGGNTGGGAGGCTGCGCGGCGATGCTGCANTTTCGTCCGGGCCGGGGCNGCGGG
CCTGGCTT
Sequence 1791
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CCCAACAATTCAAACTGGNAGAAGTGAGAAAAACAGAATGCAGCTTTCAAGGTTCGTTTC
AAGCAGTTGGCTTGTGGGACTCTGAGAGATGCTGCTGNCCATGACATGCGGGAATTATCA
TGATCAACTACCCAGCTTGGATTTCACCCAGTGGCCAACTAGCTTTGTGTGGGAGACGGC
AAGGGTTGGATTTTTCAAAAGAGTAAACCAGACCCGTGACCAAGGTGTNAACTAAGAAGT
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TTAATCTTCATGGGATCC
Sequence 1792
GTGCTGGTTTNTCTTGCAGATGCTGCTGCTAGGGGTGGTGGGAAGCAGCCGTGGGACGCG
TGGCCGGNAGCGGNGGTGACAGCCTGGGANNNCGGGGGGCTTNTCTTCCTTGTCCTCCTCC
TNTCCTGTCTATTCCCAGNGNGGGGGCGTGGCTGACACTAAAGACTNTGTANNCATCAACC
CGAGTGCANNTTCNATGGAAAATGAAGGTTGCACGTTTTCAAAAAATACCTAATGGTGAA
AATGAGACAATGATTTGCTGTATTGNCANCCAAAAAAAGCAAAGGGNATTNCCANTCATT
GAAGNTGCAAGCATTCTNCAAGCTGATCTTCNAAATGGGTCTAAACAAAATGTNAAGNTA
AGTTCNTNAGGCNAGCCCTTTCATGGTTTNGAAATGAGNTTTCGNTTTTTTATGTGAAAGN
TGGAGGCCNCCNTGTNGGGAAAGAAANGNGTTTNTTTTCNCCAGGTTTTNAAAA
Sequence 1793
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CAAAATAACTGTGAATGACACACCTTGCTGTAAATGAACTGTGCTAACCCTGACTGTGGG
CTTGAGAACAAAGATGAACTCTAGAACTCTAGCAGCCTAACTGCTGCTTCTCAAATAACT
GTGTGAACAGTGAGATATTACTGTTTGTTTCTAAAAATCCTACTGTGCCCAGTTTCCTTC
ACTACATGCCCTGCATTTTTTATTTAAATATTTAGCTGTAGCGCCATCAGATATGGATGC
CTTCTAACAATTGCTGTTTGTAAAATAAATCAGGATGGTAGAAAGTGATTATATGGAAAA
TTGGAACCTGGATGAGACCTTTTCGTTGAATTCTGAAGAGTAATGATGTGAAAATTGATA
CAGGGCAAGAGATGATTCTTTTGGGTTTTCTTCTACTTCATGTCCAGAAGAGTAAGAGGG
GAAAA
Sequence 1794
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GGCCGAGGCAGGAGGATCCCTTTAGCCCAGGAGTTAAAGACCAGCCTGGGCAACATAGGG
AGACCCTGTCTTTTTTTTTGGGCAGCGTGGTGGGGGATAAATAAATAAAAGGAAAAAAAAC
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TATTTAATTATTGGTAANGGAGTTTAAGACTNGAAAGACTAGAGTGCTTTCTAGTCCAAA
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CCTGTGGGACTGGGCTTAAA
Sequence 1795
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AGAGCCCTATGGCTTCCGTGCCTCAGTGTTATTCGATACAATGCAACACCATCTAGCCTT
GAATAGAGATTTGTCCACACCTGGCCTGGAGAAGGACAGTGGAGGGAAGACACCTGGTGA
CTTTAGCTATGCCTATCAAAAGCCTGAGGAAACAACCAGGTCCCCAGATGAAGAAGATTA
TGACTTGAGTTATGAGAAGACCACCCGGACCTCAGATGTGGGTGGCTATTACTATAGAAA
ATAGAGAGAACCACAAAATCTCCAAGTGACAGTGGCTACTCCTATGAGACCATTGGGGAA
AACTACCAAGACCCCTGAAGGATGGTGACTATTCCTATGAA
Sequence 1796
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GAGGTAACGAGAGGCGGAGAGGGTGGCTCCTCAAATATACACCCCTCCTGTCCTCCGCCA
CCCCACCTTTGATTTCTCTTCCCTCAACCCAGCACTCCAGCCCCACCCCAGGGTCAATTT
TTGCCCCCTTCCATCTGAGCAGTGTTACCAGGCCCCAGGGGGACCGGAGGATCGGGGGCC
GGGTGGGGGGTCCCATGGAGTACTCCAGCACACGCAGGGGCTCCCTGCAGACAGGGGGGG
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Sequence 1797
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AGTCTCTCTCTGGAGCCCAGGTTGGAGTACAGTGGCAAGATCTTGGCTCACTGCAACCTC
CACATTCCGGGTTCAAGTAATTCTCCCGCCTCAGCTTCCTGAGTAGCTGGGATTACAGGC
GTGTGCCACCATGCCAGCTTTTTTGTATTTTGTATGTTAGCCATGTTGGCAAGGCTGGCC
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ATCTTTTTATTTT
Sequence 1798
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AGCGAGCAGCTGAGCCGCGACTGTGATGCGCTAATGGCGGGCTGCATCCANGAGGCCCCG
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GGAANCGTTTTGCGGGGGCCTTGGCCTGCCCAAGCTNTACCTTTTCCAACGGGGCCCCGG
CGAG
Sequence 1799
GGCGNAGCTCGNCTTCCTCCNCGCCCAAGTTCCGGCGCCGCTCTTGCGGGAGCGTGCCGC
ATCACCCCGGGGGGCCCCTACGCGAGGATCTCCGGGGCCGTTGGCAGCAGCCTG
Sequence 1800
TCACCCCGCGTCCGGGCGGGCGTGGGGCGGTGGGAGGTAGTGAAGAAGGGTCGGCGGCCT
GGGGTCGGCGCCGGCGCCGGCGGCCGAGGAGGCGGTAGGAACCGCAGGGCGCTCGGGGAA
GCAAACNGAGTGTGGAAATACNACCTGACCCCTGCAATCCAGACCACAAGCACCCTTTAT
NAGCGGGNGCTTTNAGAATATCATNAAGNGGNTTTAATAAGGAGCAGGTCCCACCCCCTGC
TGTGGAA
Sequence 1801
GTCGACCCACGCGTCCGGGAGCAGAGTCGACTGGGAGCGACCGAGCGGGCCGCCGCCGCC
GCCATGAACCCCGAATATGACTACCTGTTTAAGCTGCTTTTGATTGGCGACTCAGGCGTG

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GGCAAGTCATGCCTGCTCCTGCGGTTTGCTGATGACACGTACACAGAGAGCTACATCAGC
ACCATCGGGGTGGACTTCAAGATCCGAACCATCGAGCTGGATGGCAAAACTATCAAACTT
CAGATCTGGGACACAGCGGGCCAGGAACGGTTCCGGACCATCACTTCCAGCTACTACCGG
GGGGCTCATGGCATCATCGTGGTGTATGACGTCACTGACCAGGAATCCTACGCCAACGTG
AAAGCAGTGGCTGCAGGAGATTGACCGCTATGCCAGCCGAGAACGTCAATAAAGCTCCTG
GTGGGGCAACAAAGAGCGGACCCTCACCACCAAAGAAGGTNNGTGGGACCAACACCACAA
GCCAAGGGAGGTTTGGCAAGACTTCTTTTGGGGCATTC
Sequence 1802
NCCCCGCGTCCGCGGACGCGTGGGCGGAGCTGCTGTGCAGTGGAACGCGCTGGGCCGCGG
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ATTCAGAAGCCAGAGAGGAAGATTCAGTTTAAGGAGAAAGTGCTGTGGACCGCTATCACC
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GCTGACCCTTTCTATTGGATGAGAGTGATTCTAGCCTCTAACAGAGGCACATTGATGGAG
CTAGGGATCTCTCCTATTGTCACGTCTGGCCTTATAATGCAACTCTTGGCTGGCGCCAAG
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ATTTGGCATGATCA
Sequence 1803
CGCGTCCGCGCTTCTGTTACGGCCAGTGCAACTCTTTCTACATCCCCAGGCACATCCGGA
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TGGTCACACTCAACTGCCCTGAACTACAGCCACCTACCAAGAAGAAGAGAGTCACACGTG
TGAAGCAGTGTCGTTGCATATCCATCGATTTGGATTAAGCCAAATCCAGGTGCACCCAGC
ATGTCCTAGGAATGCAGCCCCAGGAAGTCCCAGACCTAAAACAACCAGATTCTTACTTGG
CTTAAACCTAGAGGCCAGAAGAACCCCCAGCTGCCTCCTGGCAGGAGCCTGCTTGTGCCG
TAGTTCGTGTGCATGAAGTGTGGATGGGTGCCTGTGGGGGTGGTTTTTAGGACACCAGAA
GAAAACACAGTCTCTTGCTAGAGAGCACTCCCTATTTTGTAAACATATCTGCTTTAAGGG
GGATGTACCAGAAACCCACCTTACCCC
Sequence 1804
CCCGCGTCCGTAGATTAAATTATGCAAGTTGCAAGAATGTAGTAACTCTGATCAGCTACA
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TTGTAACACCCCTACAACTGATTCTGATTCATCTATAGCAGTTAAAGCACTACAAATAGA
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TGGAAAATCTCAGCAACCTGAGTCAAAAATGCAATCTGAATTTATAAAAGAAAAAAGTGC
TACTTGTTCAAATGAGGAAAAAGGTAACTTAAACGAGGTCAGTAATAACTGAAGAGAAAG
AAACAGATGGGAGATCACCCTATCTTCATTACTGAACCAAAACTACCNGTTCACAATATA
CCTGGATTCGACAGCATAAAAGAAACC
Sequence 1805
GCGTCCGGCAGCTGAAAGGGGATTTGGGCCCGGAAGATCCGAGTCCATCCGCGGCGGGGA
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CGCCCCGTATTGAGGCGCTGGGAGCGGCGGGGCGACAGGAAAGCGATGGTGAAAGCGGGG
CCGTGAGGGGGGCGGAGCCGGGAGCCGGACCCGCAGTAGCGGCAGCAGCGGCGCCGCCTC
CCAGAGTTCAGACCCAGGAAGCGGCCGGGAGGGCAGGAGCGAATCGGGCCGCCGCCGCCA
TGGAGCTGAGAGTCGGGAACAGGTACCCGGCTGGGCCGGAAGATCGGCAGCGGCTC
Sequence 1806
GTCGCCCCGCGTCCGCACAGTTGATTCTGAATTTTTAAGGCTTTCCTAATAGGCTGATCA
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ACTGATTCACATTTTGACAAAAGAGAGAAAATACAAAAATGAGTTTTGCAAATGTAATAA
CTTTTTCTGCATATAGAACTAAATAATTGAAAAATATGGGCTATAGTTCTCAAAGGTAGA
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TGGAAAATAATTAGGCTGATTTTGCAGGTCTTCATTGTTAGAGATTCTGAAGTATTTACT
GTCAATTCATAGGTTTCAGTTTATTTAGGAAATTAGTGTTTGACAGCTTTTTTTAAATTA

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TTTCACTGAAGCTGAGATTATTAGTGATCAAAGTTAAAATTTCAATATTTAATTTCTCTA
TATATTATTAATATTAAAATGGTTT

Sequence 1807

GTCGACCCCGCGTCCGGTACTACATCCCCTGAAGAAACATGTGCCCAGGTGATTCGTGAA
GCTAAGAGAACAGCACCAAGTATAGTGTATGTTCCTCATATCCACGTGTGGTGGGAAATA
GTTGGACCGACACTTAAAGCCACATTTACCACATTATTACAGAATATTCCTTCATTTGCT
CCAGTTTTACTACTTGCAACTTCTGACAAACCCCATTCCGCTTTGCCAGAAGAGGTGCAA
GAATTGTTTATCCGTGATTATGGAGAGATTTTTAATGTCCAGTTACCGGATAAAGAAGAA
CGGACAAAATTTTTTGAAGATTTAATTCTAAAACAAGCTGCTAAGCCTCCTATATCAAAA
AAGAAAGCAGTTTTGCAGGCTTTGGGAGGTACTCCCAGTAGCACCACCACCTG

Sequence 1808

CCCCGCGTCCGGCCTTTAAAAGAAGACTTGAATTCCTATGGAACAATAAAGACACAGCAG
AAAACAGGGATTCTCCTGTTTCAGAGGAAATAAAAATGACCTGTCAACAATTTATCCATT
ATCACCGTGACCTCTGTATCCGAAACATTGTCAAAGAAAGAAGGTGTGGTGCAAAGACTT
CTGCTGGAACTTTCTGTGGCTGTGACCTGGTGAGCTGGCTAATTGAAGTCGGCCTTGCCT
CCGACCGTGGTGAAGCTGTGATATACGGAGACAGGCTGGTACAAGGGGGAGTCATCCAAC
ATATTACCAACGAGTATGAATTCCGGGATGAGTACTTGTTTTACAGATTTCTTCAAAAGA
GTCCTGAACAGAGTCCTCCTGCTATTAATGCAAACACTCTCCAACAGGAAAGATATAAAG
AAATTGAGCATTCATCCCCACCCTCACATTCCCCTAAGACCTAAATTATGCAGGGGAGAA
CCCTACATGGAATCAT

Sequence 1809

CGCGTCCGCTGGAGTGCTGCTGAGGAGCGANGGGCCCATCTGGGGTCTCTGGAAGTCGGT
GCCCAGGCCTGAAGGATAGCCCCCCTTGCGCTTCCCTGGGCTGCGGCCGGCCTTCTCAGA
ACGAAGGGCAGTCCTTCCACCCCGCGGCGCAGGTGACCGCTGCCATGGCTTTTCCCCATC
GGCCGGACGCCCCTGAGCTGCCTGACTTCTCCATGCTGAAGAGGCTGGCTCGAGACCAGC
TCATCTATCTGCTGGAGCAGCTTCCTGGAAAAAAGGATTTATTCATTGAGGCAGATCTCA
TGAGCCCTTTGGATCGAATTGCCAATGTCTCCATCCTGAAGCAACACGAAGTAGACAAGC
TATACAAGGTGGAGAACAAGCCAGCCCTCAGCTCCAATGAACAATTGTGCTTCTTGGTCA
GACCCCGCATCAAGAATATGCGATACATTGCCAGTCTTGTCAATGCTGACAAATTGGCTG
GCCGAA

Sequence 1810

CGCGTCCGGTGCATCTGAGGACTGGTGGGAAGGCANGGCACAACGGGATTGACGGGCTGG
TGCCTCACCAGTATATAGTGGTGCAGGATATGGATGATACGTTTTCAGACACTCTGAGCC
AAAAAGCCGACAGTGAGGCCAGCAGTGGGCCAGTCACGGAAGACAAGTCCTCATCCAAGG
ACATGAACTCCCCGACAGACCGTCATCCTGACGGCTATTTAGCCAGGCAACGAAAAAGAG
GAGAGCCACCCCCTCCAGTAAGGCGTCCTGGCAGGACCAGTGAT

Sequence 1811

TCAGGAGTCGACCCCGCGTCCGGAAGGCCGATGCTGTGGGGGTGGGCGTGGAGAGAATTC
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CCCGTCGGCGCGGAGTGGTCTCACGTGTGAAACATGGCTACAGATTGGCTGGGAAGTATT
GTGTCCATCAATTGTGGAGATAGCTTGGGTGTCTATCAGGGAAGAGTGTCAGCTGTGGAT
CAGGTCAGCCAGACCATTTCTCTCACCCGGCCTTTCCATAATGGAGTGAAGTGTCTTGTT
CCAGAAGTCACCTTCAGGGCAGGTGACATTACGGAGTTAAAAATTCTGGAGATACCAGGA
CCTGGAGACAACCAACATTTTGGAGACCTTCATCAAACAGAATTAGGCCCCTCTGGTGCT
GGCTGCCAAGTGGGCATCAATCAGAATGGCACAGGCAAGTTTGTCAAG

Sequence 1812

CCGCGTCCGCCCAGTCCNAGTGCTGGCTTTCCCTGTATCTGCCTCTGCCAGGCAACACTT
ATCATGGCTCCCAATCAGCAGGAGCCTCCATGCTCCACTTTGAACAGCCTCTATGCTCCA
GCAATGGGGCATTTGTGAAGAGTGACTTGATTAACTTTTCTGACCATGGGTATAATACAG
TTGCTTCAGAGGGCAGTGGTTCTGGGTGTGATTTTTACACTGTAACATTGTATACAGTGT
CATGGATAATTACTATTTTTTTTTCTGGTCATTAACACTCACCTACTCTAGTACTAGGATTT

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CAGACCAAGGTCCTCATGACGCCTGGATATTTTAGTATCTATATCCAATAATCTTTTCTC
TCCTACTGAATATCCAGGCAAAGATGAAATCGTTTTCTTTAAAACTGTCAAATTCTGTAA
AACTCAGGAGCCAGTTCAAGGGAACAAGCATCTTCACAATAGATGGAATCAAGAGTTAAA
TGTTATAGTGGCAAGCTTGTCTACTGGGCAACAGAC
Sequence 1813
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Sequence 1814
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T
Sequence 1815
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Sequence 1816
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GTTCATCAT
Sequence 1817
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Sequence 1818
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Sequence 1819
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Sequence 1823
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Sequence 1828
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GTTTCCCAAATG
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Sequence 1833
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Sequence 1834
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Sequence 1835

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Sequence 1836
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Sequence 1837
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Sequence 1838
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Sequence 1839
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Sequence 1844
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Sequence 1845
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Sequence 1847
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Sequence 1850
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GACTTTGAAA
Sequence 1854
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Sequence 1859
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Sequence 1874
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Sequence 1876
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Sequence 1879
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Sequence 1880
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Sequence 1881
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GGGAGACTTGGGTGAATACANTNTCCTTCCANAGGTCCGGGGGNGTTCATGGTATGCTGTA
NGGTCCTTAAAAAAAATGGG

Sequence 1884
GTCCGAAAAAATGATAATGTGCATAAAATTCAACCCAGCTTTCAAAGTCCAGTCAAAATA
TCAGAAATCATGAGGTCCAATGGATTTTGTTTAGCAAATACCGAAACAATAGTTATTGAC
CACAGTATACCAAATGGAAGAGACCAGCACCTGGGCGTGGACCCAACAGAGCATTTATTT
GAGAATGGCAGTGAGTTTCCCTCAGAGCTGGAGGACGGGGACGACCCAGCAGCCTACGTC
ACCAACCTGTCATATTACCACCTGGTCCCCTTCGAGACAGACATTTGGGACTGAACCTCT
CTATCAGGCCTCCCCCGCCTCAAGCTGTTCACTGCC

Sequence 1885
CGCGTCCGCACAACAAGACACTCCAATTGTGATTTGAGTTGAGGATCTCTGCCTGCCTTC
CTGCCGTCCTTCCTTCTTCCCCGATCCATGCTACTTTTAGGGGCTGCGGAGAGCAGCAGC
AGAGCTGAGTAATGATACAGGGCACCACGGAGAGAAAGTAGAACCATTTCACTCCTGGGA

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AGATGGGGTATTTCCCACTTCCAGCAACGAAATAACAAATGAAAAGTTGCATACTTATTG
ATGTATTGTATGAGCCAGTAGCATTTTATGTACAAAACAGAAGTCAATGCAACAGTATGT
ATGTGTGCCTGTGTGTGTATAAAAATAACCATTGAAGCTAACTTGCTAATGTACTTAGGC
AAGCCACTTCCCATCTCTGGGCCTCGTCTTTCCTCCCTCTAAAATCAAAGAGCTGAATTA
TGTGATCCTTGAGGTCTCTTCCACTTATAATACCAACTGTCTTGTCAGACTGGCAAATTA
TATTGGCCTCTCCTTATGTGGTGGGTTTTTTTGGGAGGGNCATAGTTNCTTATACACAGG
ACACCTGCATNATCNAAGGGCTTTTTTTTCTAAAAAAAAAAAAAATG
Sequence 1886
CGTCCGCTCCTGAGTAGCTGGGATGACAGGCGTGCACCTGGCAGCTTTTTCAAAGTGTTG
ATGGTAATCTGAGGCAATCTAAGGGAGTCATTTTTTAAGTGACTTTATACAGAAAGATTG
GTAAGAGCCAAGGGGTAGAAGTGGCATAAATGTCTAAAGCAGGGAAGTGACAGGGACTTT
CATTGTTCTTGGCTGAGGAGAAGCGGGAGTGGCTGATGGAAGCACCTAAATGATGCCTTT
GTCTGTGGGAAGGCAAATGATGCCCCAGAGCTCTAACCAAAGGTTTTGCAGCCGCCGAAA
AACAGGAAAGTTGGGAAGCGGGGGTAGGACTACACTGAATCATTAACAGTGCTGTAAACT
ACCCATGTGGCCATTAACAATGGACCTTTGGGGGAGTTTTCCTAAACGATCACTCTGGA
Sequence 1887
CGTCAAACACCCGCAGGCTGTCGATTTCATCATCAAAGAAATCAAGACGATAAGGGCAGC
TCACTCCCCATCGGGAAGAGATCCAGCAACGCGCCGCGCGTGGCGTATTCGCCGTGCTCC
ATCACCTGGTCAACATGGCGATAACCGGCGCTGTCCAGTTGGGTTCGTAATGCATCTCGT
GACAGGCGCTGACCTTTTTTCATCACCAGCGCATGACCGTGGAGAAAACTGTGTGGGCAA
ACGCGCTGCATAAGCGTATTCACCGGAACAATCAGTACGCCACGCTGCATCGTCGGTAGC
TGGTAAAGGGTGGAAAGGCGCGAGGAGATAATGTCCTGATGAGGCGAAAAACTGTCGTAG
GGAAGAGTTTCCCAGTCCGCCAGATTCATCACCATTTGATCGGTAAACTGGCTGATTTCA
TCATGCAAACGCAGAGCATTTTGCATATCTGGTGCAATGAGTACCACCGGACCGGCGTGA
CGTTCGGCA
Sequence 1888
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AAATGTTCCAGATTCATATTCTTGTGTGTGTTTGATAAAATTCATGGCTTCCAAAGTAAC
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TAAGTGACCCCCTCACTAGTGAAAATAATAAATGTTCTATATCATTTATTATTATTTGTG
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Sequence 1889
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AAGAAGAGATTAAATCTCTGACTGCTGAAATTGACCCGGTTGAAAAACTGTGGCTGTTTA
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AAATTGCTGAAAACATTACCAAACACCTCCCAGACAATGAATGTATTGAAAAAGTTGAAA
TTGCTGGTCCTGGTTTTATTAATGTCCACTTAAGAAAGGA
Sequence 1890
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TTATTGGAGTTTTTAAATTAAGTGTATTGGAAAAGAAAGGATGGTATGTGTATGAAATGTT
AAGATCCTACGCAACACTGCTATTTTTTTTCCTTTAATATTTGTGCTGCATAACAAAAGCC
ACTAGACTGTTACTGTCTTGTCTGTCCATGTGTTAACAGCATTTCTTAATGATGTATATA
TGGAGTGGTCTTCAATCATAGTGAAGAATTTAAAGAGAAAGTCAATTGTATTGGCATTTT

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TAATAAGAACAAAATTAGTTCGTCTAAGGGGACTGGCTGGCCACATATTTGTTCCTTGCC
CATATGCTTTCTACTTCTTGTTCTTATTATGAAATTATGAATTTGAAGCCTCTGAAATGG
TGATCAGTTTTCAACATCTTTCAAAAACAAAATTACTA

Sequence 1891
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AGGCAGCTCGGATTCAACTACCTTAGATAATATTTCTGAAAACCTACCAGCCAGAGGGTA
GGGCACAAAGATGGATGTAATGCACTTTGGGAGGCCAAGGCGGGAGGATTGCTTTGAGCC
CAGGAGTTCAAGACCAGCCTGGGCAACATACCAAGACCCCCGTCTCTTTAAAAATATATA
TATTTTAAATATACTTAAATATATATTTCTAATATCTTTAAATATATATATATATTTTAA
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AATCAGCCCCCATGTTCTCCACTGAAAAATCCTCTTTTTTGGGGGGTTTTCTTTCTTTCT
TTTTTGAATTTGCACTGGACGGNGGACCGTCAGCCATGTNCAAGGATCCCCAGGGGGGGG
GNNGTCAAAATGGCTATTGGAAAATTGGGGTGGAAATGNATGCCTTTTTCACTTTTTGGA
TAAATAAAACATGTAAAAAAATGNTTTCAAAAAAAATTAATTAAAATTAAATTAAATTCC
NNAAAAAAAAAAAAAAAA

Sequence 1892
AGAGGATTCCCAGGGTTTCCAGGGGGCCAAAGGAGACAAAGGTTCAAAGGGTGAGGTGGG
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GGGTCCTCCGGGGCCCCAGGGACAGCCCGGGGTTACCGGGATCCCCAGGCCATGCCACGG
AGGGGCCCAAAGGAGACCGCGGACCTCANGGCCAGCCTGGCCTGCCAGGACTTCCGGGAC
CCATGGGGCCTCCAGGGCTTCCTGGGATTGATGGAGTTAAAAGGTGACAAAGGAAATCCA

Sequence 1893
TCCGCCCCGCGTCCGCTTTTTCCNAACAAGGAGCATCCAAAGACACAGTGACTTGAGCTA
TAGATAGTAAAAATCATACGAGAGTTGAACTGAGTCAGGTTTAGGAAGCAAGTTTGGTTG
CATCAATTAAGCAGGCTCTTTTCAATTGACTGATGCTGGGGCCTTCAGTTTTATTCTCAG
TATAGATTGCCAGTATTGTTAAGAGTATCCAAAGGCCTTTCTAGATGGAGACAGAATAAC
TGACTTGAACATACAGTGTGCCTGTAAGTGTCCAGGCTCAGAGCTGGTGAAAACCCTTCT
GTTGGGCGTGTGCAGGGTTAAACTCCTGAAGTAACTTGTGAGGACTTCAGTGCTTGCTGG
TGTCCTGGGCAGCACCATGAATGCCTTTACCAAGACATGCCAAGTTGGATCCCCCGAATG
AAGCAAGAGTGGCTTGTGGGTGTGACCCTTGCTCCCTGCTACACAGAAGCATCGCAAGGG
CTGCCTGTGTNGGTTTCCAGATGAAGGGTCTTGGGTCCCGGAAGCTTTGTGGTTGAGAGC
TCAAGTGGGACC

Sequence 1894
GTCACCACGCGTCCGCGGACGCGTGGGCGCACGCCGGCGGCGCGGAGGCCGGCTCTGCGC
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TGCCCTCCAGCGGAGACGCAGCTCCTCAGGCGCCCGGCGGTATTTGTTGGGTCGGCGGCG
TCAGGGATTCGCAGTGGCCTGTGGTCGGCGTCGTCCGGCCACTGGTGCGCCCCCGCGGCA
GGCAGAGCTCACGCTCCTGTCCCCGGCTGGTCCGGGGTCTGGGCGCCGCGTCGACGGCG
GCTCCGCAGGACGCGCAGACCGGGCCGCAGCCCATGCC

Sequence 1895
NCCCCGCGTCCGATTTAAATGCCCTAAATTTTAAATTCATACCTTTCCATGATTCAAAAT
TCAAAAGATCCCATGGGAGATGGTTGGAAAATCTCCACTTCATCCTCCAAGCCATTCAAG
TTTCCTTTCCAGAAGCAACTGCTACTGCCTTTCATTCATATGTTCTTCTAAAGATAGTCT
ACATTTGGAAATGTATGTTAAAAGCACGTATTTTTAAAATTTTTTTCCTAAATAGTAACA
CATTGTATGTCTGCTGTGTACTTTGCTATTTTTATTTATTTTAGTGTTTCTTATATAGCA
GATGGAATGAATTTGAAGTTCCCAGGGCTGAGGATCCATGCCTTCTTTGTTTCTAAGTTA
TCTTTCCCATAGCTTTTCATTATCTTTC

Sequence 1896
CGACCCACGCGTCCGCCCNGCGTCCGAGGGGCAACAGCAGAGCCTACAGCAGGGGGCACA
CTCCACCGGNTCCAGCCGCCTGCACGACCTCTACTGGCAGGCCATGAAAACCCTGGGAGT

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CCAGCGCCCCAAGTTGGAGAAGAAGGATGCCAAGGAGATCCCCAGTGCCACCCAGAGCCC
CATCAGTAAGAAGCGGAAGAAAAAGGGATTCTTGCCAGAGACGAAGAAGCGCAAGAAACG
CAAGTCAGAGGATGGCACGCCAGCGGAGGATGGCACACCTGCAGCCACCGGCGGGAGCCA
GCCCCCCAGCATGGGCAGGAAGAAGAGGAACAGGACAAAGGCTAAGGTCCCAGCCCAGGC
AAACGGGACGCCAACCACCAAGAGTCCAGCCCCTGGCGCCCCCAC
Sequence 1897
ATTATATACTTCTGAATGGCACCTTACTTTTTGGAAACAAATCTTCTGTTATTTACAAAA
TAATAATTTTTAAAAAACATAAAAAAAAAAATCCAAAGCTGCTCTCGATAATAGTCAACAT
TTGCATATATATGGAATTTCTTACTTTTTTTTCTCCCAAACTCTATTTAATAAACTTATTT
TAATGTTTGTGTATTTCATGTATAATTGTGATCTCAATTATAAAAGTTTAATTCAGCATG
TCTTTGAGCCAATATAATTACTGCACACCCACTAAATTGGGATCAGCCATTATAAATAAT
GTAGTTTTAGAATAATAAAACATGACACATATATATATATATAAATATATAGTATATATT
GGCACATCGGTGAAAGTTTAATATGTGCAGGAAGGTTTTTTTCTTTCTTCAAGTTAAAAA
TTATTTTTTGCCATATGTAATTTTGGTGTTGCAGGCTGGTCGAGAGGATAAAAAATGGAT
TTTAAATCTGGGTACCGGATGGATCTTTCNGGNGGTTAAGAAACACAGGGGGNTGNGGACC
TTCCTTTTT
Sequence 1898
CCGCGTCCGAATATAGTATTTTTTTAATTTTTGTGGGGATGGATTCTCAAATACTTGTGAT
TTTAAAAGATTCTAAAGCTAAAACACAACTTGATTTTAAAAAGAATGATTCTCCTTACAC
AATTATAAATATTTGCAGTAAATATTTTCCTTATAATACTGTTTTGACCCCATTTAAAAA
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ACTTCGGTTCCCAACATGCCGTATGCATTTAGACTGTAGCTCCTCAGCCCTGTGGACACA
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Sequence 1899
GCCCTGGAGGCTACTTGTAAATCCTTAGAAGAAAAGCTGGATCTGGTCACGAACAAGCAG
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TCCAGCTGTGGGCAGGCGGGCAGTCAGAGCATNGGGAGCAACGTCACGCTCATCACCCTG
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Sequence 1900
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CAGGACGTGCTGAGGACCAACCTGGGGCCCAAAGGGACCATAAAGATGGCCTTCATCCCA
GAATAATCACTGAAGGATTTGAAGCTGTGAAGGAAAAGCCCTTCATTTTTTGGAAGAAGT
CAAAGTAAGCAGAGAGATGGACAAGGAAAC
Sequence 1901
CCACGCGTCCGCCCCGCGTCCGAAACATGAGGTTCTCTCTACTGGTCCTCTTAACTGTGG
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CTTCTGTGTTTGAACTGAAGTCTGTATTGTAACTATGTTTAAAGTAATTGTTCCAGAGAC
AAATATTTCTAGACACTTTTTTCTTTACAAACAAAAGCATTCGGAGGGAGGGGGATGGTGA
CTGAGATGAGAGGGGAGAGCTGAACAGA
Sequence 1902
GTCGCCCCGCGTCCGCCCTCCCTGGCAAATAATATAATAACCCGTGAATTTTCAGGAATT
TAAAAATTANGCTTTTTTCCACTTAAAGGAGAAAAATATTTGGGACTAGCAGCAGAGGCA
GTAAGAGATGTGAACCTTGGTGAGCTCTGATACAGTGAGAAGAGATTATACTCATGAAAG
AGAATGTTAGTGTTACAGAGAAGCAGCCGATAGCAAATCGACTGTAGAGACTTGGCGGCG
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TATTTCTTGATGAATTTATAGATCATTTGAGATGTTGAGTTACTTTAGTTTAGTTTTGTT
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CCTGNTAGCATTAATTTTTTTGAGTGCCCTTCCTTTTTTNCCCTTCCCCTCCCTTTTTNTTT
TTCTCT
Sequence 1903
GCGTCCGCCCCGCGTCCGGGAAACCCCCTTCGATGACCTCCAGAGCCTCCCAAACGACGT
GATCTCTTCCCTGAAGAACAGGCTGAAAAAGGTCTCCACAACCACTGGGGATGGTGTGGC
CAGAGCGTTCCTCAAGGCCCAGGCTGCTTTCTTCGGTAGCTACCGAAACGCTCTGAAAAT
CGAGCCGGAGGAGCCGATCACTTTCTGTGAGGAAGCCTTCGTGTCCCACTACCGCTCCGG
AGCCATGAGGCAGTTCCTGCAGAACGCCACACAGCTGCAGCTCTTCAAGCAGTTTATTGA
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GAAAGGGAAGTGGAGCAATTCTGAATACTGTAAAGACCAAAGCAA
Sequence 1904
CGTACGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCG
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GGGCATCTTCTTCACCCNGGCGGNGCAGTTNACGGAGGAGAAATTTGGCCAGNCTGAGAA
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Sequence 1905
CNCGCGTCCGGTGCATCTTGCCCATTGATTTCTAAATGTATTAACTACTTAAATTAATCC
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GAAGGTTCCAGAAATGATTT
Sequence 1906
GANCAGGCTCAAGAGCAACATGGAGGTCTGCACTTAATCGCTCCTCTCCGGGGGCGGCCA
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CAGCGGCAGCGGAAAACGGACAATGGGTGGATTCGGGTCCAGATTCTGGTAGGAGGGAGT
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CTCAGCTTTCTCATCTGTACGGTTGGGACAAGTACAGTAACCCTCTCCCGTCAAGACGGG
CC
Sequence 1907
GTCGACCNCGCGTCCGAACATCGTCAACTACGGCATCCCAGCCCACCGTGACATCGACGA
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CTACGAGTGCTACTGCAAGCAGGGCTTCTACTACGACGGGAACCTGCTGGAATGCGTGGA
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CGGCTACCGCTGTGCCTGCACGCCCCCTGCCGAGTACAGTCCCGCGCAGCGCCAGTGCCT
GAGCCCGGAAGAGATGGGACGTGGACGAGTGCCAGGACCCGGCAGCCTGCCGCCCTGGCC
GCTGCGTCAACCTGCCGGGCTCCTACCGTGNGAAGTGTCGCCCGCCTTGGGTGCCCGGGC
CCTCCGGCCGNGATTGCCAGCTCCCGAGAGCCCGGCCGAGCGTGCCCCGGAGCGGGCCGA

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ACGTGTGCTGGAACCACGCGGAAGAGGACGGNATGTGCCCTTGCCCCCTGGCCCGGGCC ·
Sequence 1908
ACCACGCGTCCGGGCGGCCCGGCCAGGCCCCCGGCACTTCCTCGTCCTCGGCCCGGGTGC
CCTGCCCCCGTCCAGGAGCCCTAGGAGTGCTACGGGGGGGCCGGAGCCTTGCCCGGGCCGC
TGCCCCGTCCCTGGATTCGGGGCTGGACGCAGCAAGCAGGNGCGCTGTGTCCCCAAGCTC
CCCGTCCTCGGGGGAGCTTTTGGAAGAGTCCCAGATGGAAGCGACCAGGCTCCGGCAGAA
GGCAGAGGAGCTAGTGAAGGACAACGAGCTGCTCCCACCACCTTNTCCCTCCTTGGGCTC
CTTCGACCCCCTGGCTGANCTCACAGGAAAGGACTCAAATGTCACAGCATCTCCCACAGN
CCCTGCATGCC
Sequence 1909
ACGCGTCCGGAAGGGTGTTACATGTGTCTCTTCAATACCTTTGGTTTTGGGAAGATCTCA
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GAAGACCACCTAAATATCACTTGCTCTGCCACTGCCCGCCCAGCCCCCATGGTCTTCTGG
AAGGTCCCTCGGTCAGGGATTGAAAATAGTACAGTGACTCTGTCTCACCCAAATGGGACC
ACGTCTGTTACCAGCATCCTCCATATCAAAGACCCTAAGAATCAGGTGGGGAAGGAGGTG
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ATCTCAATCTTACTGTACTGGGAAACGTCACCGGAATCAGGACCGAGAGCCCTAAATAAG
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CAGGAGGGAAAGG
Sequence 1910
GCGTCCGCTAGTTCTAGATCGCGAGCGGCTGCCCTTTTTTCTTTTCTTTTTTTTTTTTTTT
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ACTCAGAACACCCAATAGTCCTAGGCCCCCATCCTCGCATGGCAGCAAGCTAAATAAGCA
TNTTCCCACTGCGAGTTGGGG
Sequence 1911
GTCCGCTGAGAATGGATAATCTCACTGCAGGTATTCCATAATAGGCTTGGATTAAAACCA
GGGACAATGGGCAGCAATAGGCCATAGGTTAAGCAGCAGCAACTAGTCACCACTGGACTG
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Sequence 1912
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CGTGTATATATTCTTAGTTTTTTCTTGAAATCATTGTAATGTTAACTTTGTTGTTTCAAAT
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GGGGATCTTGAAGGCTCCCTGGGGTAACTATTTTATAACTTAGATAAAATGGCTAGTCAT
ATCTGTGTGGTTTGNAAAGGTTATTTTTTTTAATATTTTTAAGATTACAATTTTACAAATGT
AGAAATGAGCCCAACTATTTAAATTTTAAAACAGTAAAAACAAA
Sequence 1913
CGACCCACGCGTCCGCTTTGAAGCAGGAAAAGACACGTCTCTAGAGCAACATGGAAAGGA

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CAGACTCCC
Sequence 1914
CGCGTCCGCCCCGCGTCCGCTCAGAAACCCCTGCCCTTTCCCTTCAGAAAACGATGGCAG
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GCACTGTGCTGAGTGCCATACATACATTTCATTTAATTATCCAATAATCCTACTTACTA
Sequence 1915
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CCATGACAAAATTGGTATGGCGGAACAGTCATTATACATTATTTAGACTCATTCCTTCTT
CCAGTGCCCTTATGATTATTTCCTACCTTTACCATTGG
Sequence 1916
CCNCGCGTCCGCCCCGCGTCCGCCCCGCGTCCGATATTGCTTCAGAAAACTGAATGTGTA
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Sequence 1917
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GGGGAAAA
Sequence 1918
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TCATACTGGAGAGAAACCTTACAAGTGTAATGATTGTGGCAAGACCTTCAGTCAGACATC
ATCCCTTGTATACCATCGTAGACTTCATACTGGAGAGAAACCTTACAAATGTGAAGAATG
TGATGAAGCTTTCAGTTTCAAATCAAACCTTGAAAGACATAGGATAATTCATACTGGAGA

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GAAACTTTACAAGTGTAATGAATGTGGCAAGACCTTTAGTCGGAAGTC
Sequence 1919
NGACCNCGCGTCCGCGCTCCGCTGCCNGGGGCGGGAGGGAGGAATGGTTGCTTCACGCCC
CGGGGGAAGAGACNGGAAGCTCGGCTCTGGGTTGCGGGCCCCGGGGTCTCCGCGTGGGGC
GCACCGTCCGACCCGCCCCTCCCGGTGTGCAGCGCCCCGCACCGCCCCGCCTTGCCTGGG
AGAAGCCCGGCGGGACGCGCCGGGCTGGAGTGGGCGGTTATAGGCTTTGAGCTAGGCCGC
TTCCGGGAGGCGGAGCTCACACCCCATTTCCTTT
Sequence 1920
GTCCGTTCCTTGATTCCTGGAAGTCCAGTGGGTTCTGCAGCTGAAAAAGCCCTGGGTCCC
AGCAGCAGAGAGACAGGACAGAGGGGATGCTTGGGCGGGGAGGGACGGTAACCTGCAGAA
CAGATTCCATTTTTATAGAACGAGTACACGTTTGCTAAAACAGTCCTGCTTTCCCAGACT
GGATTCCCACCACAGGGACAGTCGGAACTCAGGACTAGCTCCAGCGACATCTTTCCTCCG
AATTCAAGCCTTCTATCACAATGTCAAAACAGCTATTTATAAAGCCATTTTCATTGTACT
TGATAACAGCACGAGTCCCAAAACTTTTAGAAATAAAATAGGACATTGGCTTGATTGAAA
AGAGGGACTTTTTAAAAATTGTTCTTTCGTCAGAAAGCCTTTTGGATGACT
Sequence 1921
GCGTCCGAAAAAAATAGCATTATACCTCTTCCTTGTCTCAACCGCCATGAAAATTCTGAA
CACTCCAAATTCAGTTGAATAATCCAAAACAAAATTTATAAGTATAAAATAATTTTACTT
CTTATAGTAATAGTATACTTTAAAAAGCCTCAGGGTATATTATCTTCTAAACAGCTACAA
TTCAGTGCAGCTACATTAACCAACTATGTTCTCTAGTTGAGAACAACTAGGCCTATTTCA
CTGCTGTGTAGCCTCAGTGCCTAACATGGGTGCCAAATAAATATTCGTAGAATTACACTG
AATTGTAAAAACCATTCGTTTTTGTTTACAATTGCCAAAAATCTCAAAAGGCCCTGTATT
TATGTAATTCTTTGAAATTATTATTTTATTTTGATTTCTCAGTTATTGACTGGTGGGGTG
TGACTTAGTCATAAGTACTCAATATTATAAAAACCTCAAATAATTGACTTGGATTTTACA
CAACATCCTTCCCTTTTCTACAAGTTAAATTTTTTTTACC
Sequence 1922
TTGGTATTCTTGGCTAATTTCTTAGCTACTTGAAGGTTAATTTGCAAGACTTTTAAAACC
TTAGAAAAGTTTTAAGGTTGCAAAGTTATCAACACTGGGGCAGAGGGTGGAGAGGCCAAT
GCGGGTAGAAGGAGGCAGTTATGTTTATATTGAAGGTGAAATTTTTCTTTCATTTAGAAT
GGAAAACATCCCCAAATGTATCATTATAAACTAGTCAGCCTTGACTACACAAAATTGACC
TTTAAGTTGCTTGAGAAAAACACAATGCAAATCGTTCAGAAGGGTCAACATCCTTTGGTG
CTAAAATCTTGTGTATGTTTTCAGAATGGCTTTTTCTGTATGTTATAGAATAATCACTAA
AGGAAAGGTAGTTGAATTTAAAGTCATGAAGCAAGACTCTTTAATTCAGTTATTTTAAAC
AAGAATTAAAACCCCAAACATCCTTGGCAGGCTTTGAAGCACACAGAATTTTCTAGNATT
TCTTATTA
Sequence 1923
CNCCGCCGGAACAACAACAGAAAGCTGTGTTTGTCTTTTTTCTCTCAAATATATCTCCCG
TATGAGATTTCAGGTCCCCATGTTTTCACCAAGCAATCTGCTATGTCAGCCAACCCANCA
TCACTTTCTACAGGAGGTTATGATTTTTGCCATTTACTAGAGGAAGATGTTTTATGAAAT
CAAGTTGGGGTTTGAATTCAGGTGCAGTCATCAGTTCTTTAGGGGCTGCAATGTTTTAAA
AAAAAATAAGTCATCAGATTTTAAGAAAAAAGTGATGATTTCTTATTGATATTTTTGTAA
CAGAATATAGGCTCTTAACTGAAAATCCAGAACCAGAAACATAAATCTTGAGTTTCTTTT
CATGTACATAAAAAGCAATAGCCGTTTTAGTATAGGATAGCCCTGAGCCCAAAAAGTAAT
AGAAATTTTCTCTAGATATTTTAATACAGAGAGTGTATAGACTGACTCTAAGTTAATAAA
TGTGCAAAAATATCTTAAAACCATNCCCTNCCCTTTATTTCAAC
Sequence 1924
CCNCAAAAAGGAACCAGAGGCCACTTGTATATATATGGTCTCTTCAGCATTTATTGGTGG
CAGAAGAGGAAGATTTCTGAAGAGTGCAGCTGCCTGAACCGAGCCCTGCCGAACAGCTGA
GAATTGCACTGCAACCATGAGTGAGAACAATAAGAATTCCTTGGAGAGCAGCCTACGGCA
ACTAAAATGCCATTTCACCTGGAACTTGATGGAGGGAGAAAACTCCTTGGATGATTTTGA
AAGACAAAGTATTTTACCGGACTGAGTTTCAGAATCGTGAATTCAAAGCCACAATGTGCA

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ACCTACTGGCCTATCTAAAGCACCTCAAAGGGCAAAACGAGGCAACCCTGGAATGCTTCG
TAAAGCTGAAGAGTTAATCCAGCAAGAGCATGCTGNCCAGGCAGAAATCAAGAANTCTGG
TCACCTGGGGAAACTAT
Sequence 1925
CCACGCGTCCGTCCGCCTCCAGCAGCATCCGCTTCAGCAAGGCCTGCCTGAAGAACGTCT
TCTCGGTCCTACTCATCTTCATCTACCTGCTGCTCATGGCTGTGGCCGTCTTCCTGGTCT
ACCGGACCATCACAGACTTTCGTGAGAAACTCAAGCACCCTGTCATGTCTGTGTCTTACA
AGGAAGTGGATCGCTATGATGCCCCAGGTATTGCCTTGTACCCCGNTCAGGCCCAAGTTG
CTCAAGCTGTAAGCACCATTTACGAGGTCATTCCTCCTCTGACAAGCCCTGGCCAGCCGG
GTGACATGAATTGCACCACCCAGAGGATCAACTACACGGACCCCTTCTCCAATCAGACTG
TGAAATCTGCCCTGATTGTCCAGGGGCCCCGGGAAGTGAAAAAGCGGGAGCTGGTCTTNC
TCCAGTTCCGCCTGAACAAGAATAGTGAGGACTTTNAGCCGCCATTGAT
Sequence 1926
GCGTCCGGTAAGTATTTTGGAATTCAACCCTCGAATTATTTTTTCTCATTTCAGCATAGT
GATAGGGGATGCAATGAGGCTTCATTATTTTTTATGACCTGCCCCTCATTTGCTCTGATG
TTCCCTAAATTCTGTAATCATATCATAACTTTTGTTATGAATAGAGAGGAATGGGCTCAC
TGAAACCTGACACTAGAAATTGGTGGGTGATGCTCATAACTGCAAACACTTAGCTTATTG
AAGTGCCTCTATTTACATGTTCTTTAGTTATAATATGTATTTTTCTAACAGAAATACACG
TCTGTAATTGGTATATATTATACTTTGTATGTGTCACAACAAAAGCTAAACAGAGGCTAA
AGTCTTTAGCAGAGAAGAATGAATTN
Sequence 1927
AACTGTTTGGGAAAATACGTTGAGGGAGAGAAGACCTTGGGCCAAGATGCTAAATGGGAA
TGCAAAAGCTTGAGCTGCTCTGCAAGAGAAAATAAGCANGACAGAGGGATTTGCTCTGGA
CAGANATGGAAGAGCCNGGGAACAGAGAAGTGTGGGGAAGAGATAGGAACCAGCANGATG
GCAGGGGCAAAGGGCTCAAGGGTGAGGAANGCCNGTGGGACCCCACAGANTATGGGGAGA
TAAAGGACATTGCTTTGCTTTTGGTGGCACCGTAAGCTCCTTGACTGTCTNCAGCACCCA
GAATCTCATTAAAAGCTTATTTATTGTACCTCCAACCGGCTTGTGTGCAATGGGGGTCTT
TTTGTGGAAAATCAANGAGCANACAGGTTTTCATGTGTACTGTCACCACGTGGGATGNGA
ACCAGATNGCATGGAANCAAGACGCTAAATGNAAGAGGGCCATAANGGNTGGGATTTCCC
AGGCNCCTTAAGAACAGCTTGTCTTTTTTTTTTTTCCTTTCCAAAAAA
Sequence 1928
CCGCCGGTAAGTTAAAGACTTTAAGGACATTCAAAGTTTAAAATAGTGTTCAAATTGCAA
AATTTGGCAATCTTCATATAAATTGGTTTCTTTTCTAACTTTTCAAAAACTAACATTAAA
TGTCAATTATAGGAAAACATAGTTGGAAATGTAATCATCCAAAGATCATTTTTAAAATGA
AATTTAATTAGCACATATTGAACATTTGACTTAATTGTTAAACCCCAGTTTTGTTTTGTT
TTTTTAATCAGATTTTTGCACACTGATTAGTTTTTGTGTTGTGGCTTTTGTTGCTTTATT
ATTCAAGGTTTTTTTTTTTTTTTTCTTCCCCATGGGGGAGATTGTCTTCCAATGTTTAACTA
CGTTTAAATAAATAAAAATTGAATTTTATTGNTCATTTATATAAAATCTGATCCTTGATG
TAATTTCCAATACAGTTCCAATTTTATGGCTTTATAATTACAATGATATTTTCTTCTATA
ATAAAAACCAAAGTAAACATTTAAATGGGGAAACTGATATTTTTCATTTATATGAAGTAT
NAAGCCCTCTACTGGGGTCNTTATTGGNGAATCATNCTGCCTTCAAANTGGTTTCAAAAN
TGGGTAGAAANAAAACCTTTTTTTTTTG
Sequence 1929
CCGCACACCCTAAAGAAAATAAGTATCCCAGTCGACATCAGTGACAGTGATATGATGCTG
AACATCATCAACAGCTCTATTACTACCAAAGCCATCAAGTCGGNGGTCATCTTTGGCTTG
CAACATTGCCCTGGATGCTNGTCAAGATGGTACAAGTTTGAGGAGAATGGTCGGAAAGAG
ATTGACATAAAAAAAAAATATGCAAAGAGTGGAAAAAGATACCTGGGAGGCAATCATTGGA
ANGACTTCCTGTGTCTTGCGTGGAGTCATGATTAACAAGGATGTGACCCATCCACGTATG
CGGCGCTATATCAAGAACCCTCGCATTGTGCTGCTAGGATTCTTCTCTGGAATACCAANG
AAAGGAGAAAGCCAGGACTGACATTTGAGATTACACGAGAGGAGGGACCTTCACCCCGAA
TTCTCNCAGAATGGAGNGAAGGAAGTACATCCCAGCAGCTNTGTGAGGGACCATTATCCC

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AACCTGGAAAGCCCGATGTTGGTCANTCACTTGGAAAA
Sequence 1930
TTTTTTTTTTTACAACTCAAAAAAAGAAATCTTTTAATAAAAATTACTCATAAAAATCCTA
ATAAATTTTAAAGAGCAGNGATATTCCTTATTACATTTATAAAAGAACATTTGGNCCTTT
TACAAAAAGATCCCTTTTAATTNAAATACNTTTCTTATTTACAGATTAAACATAAAATAT
CATNTACAGTTGCAAAGCATATTGCACATTACAGAGCAAAGCATTNGNGTATTTCCGNAA
GTTTTCCCAGAGTTCCCAACTCTATACTTTTTTTTTGTAAAAAGATTTACCCTTGCTTATG
CAAAAATAAAATAAGAAATGCNANCTGNCGGTTTTGCTATTTAAAAACTANAANCCAAAA
TAAACCTNTTAAAAATATTATTCCTCTGCCTTGCANAAAAGGAAAGTGAAGAGGGGTNTT
ANAAATCAGNGGGGGTTNCCACCAGNGTCNCTTGATAATTTT
Sequence 1931
CGTCCGGGGAAACTTTATATGGTTGGGGATAAGAATTGAATGCAAATTAATGAACTAGAT
TTGCATTTATGGAGTTACCTCATCATGGAGTTACCTTGGTCTGTCCCACGTCAATTAATC
TTGNTTCCTTATTTTCATAGACCATCCTCTAGAACAGTGTTTTCACACTGTGTATCATGA
TCCTATAATGCAGGGGTGTCCAAGCTTTTGTCTTCCCTTGGCTACACTGGTNGAAGAATT
GTCTTGGGCCACACATAAAATATACTAACACTAATGATAGCTGATAAGCTAAACAAACAA
AAAAATCACAAAAAATCTCATAATGTTTTTTTTGAGATTGTGCTGTTTTTTTAGTTGTGTT
TTCAATGGAGAAATAC
Sequence 1932
CGTCCGGCGCGTTCGTGCGTCCTAGTTCCAGTACATGCGTGGAGGGTTTACGGCAGCGTG
TTCTGATTCTTTGCGGGACGGCGAGCGCATTTGTGCTTTGCCCGCCGCGGCCTANGAGGC
CTTTTGAGGCCGCGTAGTCGGTGTTTTTGAACTGACTCTACAGCTTCTGGCAGGCCGTGC
GGCGCCCTGACCCGGCCTCACCATGTTGGTGCTGTTTGAAACGTCTGTGGGTTACGCCAT
CTTTAAGGTTCTAAATGAGAAGAAACTTCAAGAGGTTGATAGTTTATGGAAAGAATTTGA
AACTCCAGAGAAAGCAAACAAAATAGTAAAGCTAAAACATTTTGAGAAATTTCAGGATAC
AGCAGAAGCATTAGCAGCATTCACAGCTCTGATGGAGGGCAAAATCAATAAGCAGCTGAA
AAAAGTTCTGAAGAAAATAGTAAAAGAAGCCCATGAACCGCTGGCAGTAGCTGATGCTAA
ACTAGGAGGGGTCATAAAGGAAA
Sequence 1933
AGGGAGCCGCCCCGCGTCCGCCCCGCGTCCGCGGACGCGTGGGCTAAAACCCATCAGGCA
AGATCACCACGCATTGANATATTTTCATATCAAGATAAAGTCGCACATTTTCCACAATAC
ATTGCTAAAATAAAGAGGAGAAAGGCTTAGGAAGTTTTTTTGCAGAGAGTGCTGGTAAAG
AATTGAGCAAGTTTGCTATTGTATTGNAATGTTTCTCTCAGGTTTGNTCTTCCTATCATG
GNNGGTATTCCATGAATAATTGAGATCAGCCCTATGTAAGGTAAGATCATAATATGGGGG
ACAAATGG
Sequence 1934
GCGGACGCGTGGGCTCCATCTGAGCTCTTGGGTGACCAGGGTGCATTGTCAATGAGGGTA
ATATTTTGAAAGACATCTTTATTATGAGCAGTAGGTCTCAACAGTGGGCTTAAAATGTGC
AGTAAATCATGCTGTAAACAGATGTGTTGTCATCCAGGTTTTGTGCCATGTCTAGAGCAC
AGGCTGAGTAGATTTAGCATAATTCTGAAGGACCCCAGGATTTTCAGAATGATAAATGTG
CATTCGCTTCCACTTACAGTCACCAGCTGCATTAACCCCTAACAAGAATCAGCCTGTCCT
TTGTAGCTTTGGAGGCAGGCATGAACTTCTCCTAGATGGCATCTTCCAAGAGGGCTATTT
TTGTCTACATTGAAATTCTGCTTAGTGTAGCCACCTGCTTCAATGATCCTA
Sequence 1935
TNGACCACGCGTCCGGGCGCCNTCTCCCAGCAATCAAGTCTTGCTCCCTGGCCTGCCCTC
CGGCACCCTGGAGCCCCGCTTTCCACACAGCCTTGCTCCTCCCGGCCTGGCTTGCTGCCT
GCAGGCCTCTCAGGGTCCTTCACCGTCTCTCCAGTCTCGGATCCGGACCCGTGGATCTCA
GCCTCAGACCCTCCTCTGGCCCCGGCCTTGCCCTCGGGCACGGCCCCTTTCCTCTTCAGC
CCTGGGGTCCTGCTCCCCGAGCCAGAATATTGTCCTCCTTGGAGGTCCCCAAAGAAGGAG
TCTCCCAAGATCTCCCAACGTTGGAGGGGAAGTCCAAGCCCAGGGGGAACTTGACATACC
ACCAGGTACATGCCCCCAGAGCCGAGAAGGATNCGGGGGGGCAAGACCCCCANGCCGTAGG

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GNGTCCTCCCTTGGGTCCTCCTGGGCCATCTCTGTGGGGAAGGGACAANACTCGCAACAA
NCCACATTCTAANGATGANGGCCCTTTTNCCCT
Sequence 1936
CCNCGCGTCCGGAAAATATCCNAGGTTGTACGCAGCAGTGGAAGTTGCTCTCAAGGGAGT
GGTATTTTACACTATGCTCATGGCGACAGTCAGCAAACTCACCTGTTGAAGCAAGGAAGA
AGCTCCATGGGCACTGGTCTCAGTGGTGGGAAACGTCCTAGTCAGGAAGAGGACACACAG
AGTATTGGTCCTAAAGNCCAGAGACAGAGCACTAATTAGGTAAATATTTTAGAGCTGTAT
TTCTTGCTTTAGAAGAGTATATAATTAACATAAATTAAGATAATTTCAAAAATGGAGCAA
ATCTCTATTTTCAAACCAGAAAATCTTGAGGCATTAATTTTTAAGCAATTTTTACAAACT
CAGTTAATTTTTGGTCAAGAGACATGCATCTGTACTGGAGAAATTGTTGCACCAAGTTTT
ATATTCATCTGAACCAATGC
Sequence 1937
CCCCGCGTCCGCCCCTTTNCTCCCTGAGGACTCCACAGAAGATGGTATATTATGGGAAAC
CTTCTTGTAAAAACAACTATGAGAATTATATTGACATAGTGAAATATGTGTTCAGCGCTT
ACAAGAGAGAGTCCCCTCTCATCGTCAACACTATGGGATGGGTTTCAGACCAGGGGCTCC
TGCTTCTCATTGATCTGATCCGATTGCTGTCTCCCAGCCACGTGGTTCAGTTCCGCTCTG
ACCACAGTAAATATATGCCAGACCTTACCCCGCAGTATGTAGATGACATGGATGGCTTGT
ACACAAAAAGCAAGACCAAGATGAGAAATCGACGTTTCAGACTCGCAGCATTTGCAGATG
CTTTGGAATTTGCTGATGAAGAAAAAGAGAGTCCAGTTGAGTTCACTGGACATAAACTGA
TAGGTGTTTATACAAGACTTTGCATTCAGAATAACTCCAAGAAATAGGTAACTAACCCTC
ATTTGGCTGAAGAATTATTTTTCCTTCCGTCGAAAAAGACCTGCCATTCTCA
Sequence 1938
GTCGACCCACGCGTCCGCGGACGCGTGGGCGGACGCGTGGGCGGACGCGTGGGCTCTCGC
ACTCTGTTCTTCCGCCGCTCCGCCGTCGCGTTTCTCTGCCGGTCGCAATGGNAGAAGAGA
TCGCCGCGCTGGTCATTGACAATGGCTCC
Sequence 1939
ACCACGCGTCCGGGCGCCAGGCTAGGGCGGCCTGGCCACTGAGCCGGGGTGCAGTGGCAG
CGGGAGAGTACCTGGCGATGGCGATATGAGCGGTGCGGGGGTGGCGGCTGGGACGCGGCC
CCCCAGCTCGCCGACCCCGGGCTCTCGGCGCCGGCGCCAGCGCCCCTCTGTGGGCGTCCA
GTCCTTGAGGCCGCAGAGCCCGCAGCTCAGGCAGAGCGACCCGCAGAAACGGAACCTGGA
CCTGGAGAAAAGCCTGCAGTTCCTGCAGCAGCAGCACTCGGAGATGCTGGCCAAGCTCCA
TGAGGAGATCGAGCATCTGAAGCGGGAAAACAAGGGTGAGCCGGCGCGGGGCCCTAGGCC
GGCCCTGCCTCCCCAGGCACACTCAACACTGCCGCTCCCGCAGCACAGAAACACAGCCAT
TCAACTCCAGCACACGCCTGGGCTCAGGGGGAACACAGGACGATCTCCATTACAAGCTCA
TAATGAATCAGACATCACAGAAGAA
Sequence 1940
CGCGTCCGTGAAGGCCAGACCGAGAGGTGCCAGAAGAGAACAAACCTCCATCCAGACACG
CGGGCGGAAAGGCTCCAGGGGTCCAGGGCCAGATGGCGCCGCCTCTGCCCGACTCAGAAA
GAGAGAAACAAGAGCCGGAGCAGGGAGAGGTTGGGAAGAGGCCTNGACAGGCCCCANGCC
TTTGGAGGAGGCGGGTGATCTTCCTGAAGATCCCCAGAAAGTTCCAGAAGCAGATGGTCA
GCCAGCTGTCCAGCCTGCAAAGGAGGACCTGGGGCCAGGAGACAGGGGCCTGCATCCTCG
GCCCCAGGCAGTGCTGTCTGAGCAGCANAACGGCTTGGCGGTGGGTGGAGGGGAAAAAGG
CCAAGGGGGGACCGCCGCCAGGCAACTCCGCCGGNGACACAGGGCAGCCCGCANAGGACA
GCNACCACGGTGGGGAAGCCTTCCCTCCAGCGGAGAAGCCGGCTTCAGG
Sequence 1941
CCGCGTCCGCAGAAACATATGTGTAGTGTGCTGCAGCATAAGATGGAAGAACTTAAAGAA
GGCCTGCGGCAAAGAGATGAGCTTATTGAGAAACATGGCTTAGTTATAATCCCCGATGGC
ACTCCCAATGGTGATGTCAGTCATGAACCAGTGGCTGGAGCCATCACTGNTGTGTCTCAA
GGAAGCTGCTCAGGTCTTGGAGTCAGCAGGAGAAGGGCCATTAGATGTAAGGCTACGAAA
ACTTGCTGGAGAGAAGGAAGAACTACTGTCACAGATTAGAAAACTGAAGCTTCAGTTAGA
GGAGGAACGACAGAAATGCTCCAGGAATGATGGCACAGTGGGTGACCTGGCAGGACTGCA

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GAATGGCTCAGACTTGCAGTTCATCGAAATGCAGAGAGATGCCAATAGACAAATTAGCCG
AATACCAATTT
Sequence 1942
CCGCGTCCGCTCGCCTGCCCCGGTGCACCCAGTCCGCTCACCCAGCCCAGTCCGTCCGGT
CCTCACCGCCTGCCGGCCGGCCCACCCCCCACCCGCAGCCATGGACGCCATCAAGAAGAA
GATGCAGATGCTGAAGCTGGACAAGGAGAACGCCATCGACCGCGCCNAGNNAGGGCCGAA
TCCGACANGAAGCAANGCNTGAGGACCGCTTGCAAGCANGCTGGAGGAGGAGCAGCAGGC
CCTCCAGAAGAAGCTGAAGGGGACAGAGGATGAGGTGGAAAAGTATTCTGAATCCGTGAA
GGAGGCCCAGGAGAAACTGGAGCAGGCCGAGAAGAAGGCCACTGATGCTGAGGCAGATGT
GGCCTCCCTTNACCGCCGCATTAGCTGGTTTGAGGAGGAGCTGGACCGGGCCCAAGGANC
GCCTGGCTACAAGNCCTGCANAAACTTGTANGANGCCNNNNAANGCCGGCCTNATNATTN
GCCNNGAAGAGGGAATTNAAANGTTNTTNNAAAAACC
Sequence 1943
GTCCGCTTAGTTTCTGCATTATNAGTNAGCATAAATAATAAATCCAGAAAACGTGCTGTA
TTTGTTGTTGTTTCCTCCATGGGCTTTCCCGCCATCTAATTTGATATAGACTTCATCTCC
CGGCTCCAAATGAAGAACCACACTGTTACTGGCATAGTCGTAATTCTGATCAGCATCTTG
GGCAATTGCACTAGCACGCACCTACGTGAAACAGACAAGAATTAGGATGCGTAAATGAGA
ATTCTCAAGTTTTCTTTTTTGCCATTCATGTAGCATCACAAGCTGACTTGCTGCCATAGT
ACAGAATTTAGCATAGCAAAG
Sequence 1944
GCGTCCGGCTGCGGGCGGTCGGGGCTCCGGGCCGGGGCGGCGGCGCCATCTTGTGCCCGG
GGCCGGTGGGGAGGCCGGGGAGGGGGCCCCGGGGGGCGCAGGGGACTACGGGAACGGCCT
GGAGTCTGAGGAACTGGAGCCTGAGGAGCCCCCGGCAGCCAAGAGGAGGAGGAGGAGCCG
GGACTGGTCGAGGGTGACCCGGGGGACGGCGCCATTGAGGACCCGGAGCTGGAAGCTATC
AAAGCTCGAGTCAGGGAGATGGAGGAAGAAGCTGAGAAGCTAAAGGAGCTACAGAACGAG
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ATTGAGGAGAAGATGGAGGCTGATGCCCGTTCCATCTATGTTGGCAATGTGGACTATGGT
GCAACAGCAGAAGAGCTGGA
Sequence 1945
CCCACGCGTCCGGCAAACCGGGAAAGGAGAGGATCCCGGAGCCGGTGAGAATTCTCTGTT
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GANGNGGTTCGGGATAAAAGAGAACTAGTCNTGGGAACAATGTAAGTGGGAACNTNAAGG
NANNGGNAAAGCGGCCNATAAAGGNGNNCGGAGGNCCCAATGGNANTAAAGCGGACCCTG
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TGGCCAGAGGCCTGGGGGCCCCCCACTGGGTGGGCCGTGGGGACTGCTGANCCTGGGCCN
ACTTGG
Sequence 1946
ACGCGTCCGGCCGGGAGTGGTGGTGGGCACCTGTAATCCCAGTTACTCGGGAGGCTGAGG
CAAGAGAATCTCTTGAGCTCAGGAGGCAGAGGTTGCAGTGAGCTGAGATTGCGCCACTGC
ACTCCAGCCTGGGTGACAGAGGGAGACTCCGTCCCAAAAAAAAGAAAAAGAGAAACAGCT
GTCACCTCCCGCAGGACCCAAATCCTCTCTCTGAGCACCGTCATCCACCACATGGCTNGG
CCTNGNTTCCAAGANCNAGTCNANCCTTTNNNGNCTTANTTNNAGGTNGANNCCGCNNNT
TTCNNCCCAAAGGAGACAGCCCCTGCTCCTAGATGCCCTTGGCCTCCGCAGTGCAGCCCC
CAGGTGTCCTGACTGAAGCANAGGCCNTAGCCCCAT
Sequence 1947
NCGCGTCCGAAGTGGATGAAAATTGGTACCATGGGGAAGTCAATGGAATCCATGGCTTTT
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CACTTTATGACTTTGAAGTGAAAGACAAGGAAGCAGACAAAGATTGCCTTCCATTTGCAA
AGGATGATGTTCTGACTGTGATCCGAAGAGTGGATGAAAACTGGGCTGAAGGAATGCTGG
CAGACAAAATAGGAATATTTCCAATTTCATATGTTGAGTTTAACTCGGCTGCTAAGCAGC

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TGATAGAATGGGATAAGCCTCCTGTGCCAGGAGTTGATGCTGGAGAATGTTCCTCGGCAG
CAGCCCAGAGCAGCACTGCCCCAAAGCACTCCGACACCAAGAAGAACACCA
Sequence 1948
CGCGTCCGAGTATTTGAAGTGATGCTGGCTCAGACCGCTCCCACTATGCAAAATGTAACC
CATACATGGATTCTCCACAATCAATAGGTTTTGCTGAACTGCTGAGCCTTGGCAGTGGGC
GCCTTTGAGGCTTAGAAGTGCCNNAAGNNTCTNNCANNCNGNTNNCATGCTTTNTTTTTT
TGNCGCACTNTTANCAGTCANCAAANAAAATCCNGGGGGNGNTNNTNANCCCCNAAGGCNC
NNGNTNCCACNGTTCAGTGAAACTTGCTTCAGAGGCAGAAAGAAGCAGGTTTCCAAGCAA
CAATCAGTGCTCCACACATGCATGCATATGCGCTAGAACTTCTATTTGATCAGTTGCATG
AAGGAGCTAAAGCTCTTGATGTAGGATCTGGGAAGTGGAATC
Sequence 1949
CCACGCGTCCGGAGAGAATGGGCCGCGCGCGCCCGCGGCCGGGGAAAGCCTGTCGGGAAC
CCGGGAGAGCCTGGCCCAGGGCCCCGACGCCGCAACCACCGACGAACTCAGCTCTCTCGG
GTCTGACTCGGAGGCCAACGGCTTCGCCGAGCGCCGCATCGACAAGTTCGGCTTCATCGT
GGGCTCGCAGGGCGCCGAGGGCGCGCTGGAGGAAGTACCCCTGGAGGTGCTGAGGCAGAG
GGAGTCCAAGTGGCTGGACATGCTCAACAACTGGGACAAATGGATGGCCAAGAAGCACAA
AAAGATTCGTCTGCGGTGCCAAAAGGGCATCCCGCCTTCTCTGCGGGGCCGTGCTTGGCA
GTACCTGTCAGGAGGCAAGGTGAAGTTACAGCAGAACCCTGGAAAGTTTGACGAGCTGGA
CATGTCCCCTGGGGACCCCAAGTGNTTGGACGTGATGGAACCGTGACCTGCNCCGGCAGT
TNCCATTCATGAAGAGTTTTTGTGTCCGGGGGGG
Sequence 1950
NGCGTCCGGCTTTACAACGGGCAAATACTGGAAACCATCGGAGGCAAACAGCTCANAGTC
TTCGTATATCGTACAGCTGTCTGCATTGAAAATTCATGCATGGNGAAAGGGAGTAAGCAA
GGGAGAAACGGTGCGATTCACATATACCGCGAGATCATCAAGCCAGCNNANAAATCCCTC
CATNGAAAAGTTAAAACAAGGATAAGCGCTTTAGCACCTTTCTCAGCCTNCTTGAAGCTT
GCANAACTTGAAAAGAAGCTTCCTGACACAACNCTGGAGACTGGGACATTATTTGTGCCA
ACCAAATNGATGCTTTTAAAGGGGAATGACCTAGTTGAANNAAAAAAAGGAAATTTCTTGA
TACNGGGACCAAAAAAATGGCTCNTTTCAAAAAACAATTCCATTTCCTTTATTTNACCCC
TGGACCACCCCAAGGGAAGTTTTTTTTCAATTTGGGGAAAAAAGNGGAATTTTTGG
Sequence 1951
CAATNCTTGAACCAGGAAGGCGGAGGTTGTCGGGGGCTGAGATTGCACCACTGTGCTCCA
GCCTGGGCGACAGAGGGAGTCCCTTTCTCAAAAAAAATAATAATAAAAATAAAGATGGCAG
TAGGAAGGTTTCAGCTTGAGATGCTGTCTTTTCTTCTGTTTTTATGCATAAATACAACGA
AGACGGGAGAGGAGATGGAAAGCAAAGATGATTAAGTGAAATAATTGTGGGAAACAATAG
AGGGATAGACTTTGCTTATAGGGGATGTGGACAGAGCAGAAAAATGGGAGGAATGGGGAG
GATTCAGTTAGAGAAGGAAGAAACCGGTCCAAGGGGCTGGGGCTTTAGGCCCTGGGGCCT
CCAGTGCCCGTATAAGGCTGTGGCAGAAGCCCTGCCCATTTCCGTTCCTTTCACTCCCTA
TNTTCACCCTTACACCTCCCAAAAAC
Sequence 1952
CCGCGTCCGGGTTTTTTGGCCTTATTTTCCTGGCTTTTCCTTCTCCAAACTTTGAGGCGT
GATTTCATTCATTGAAGAATCAATACATATTTTGTTTCAAAATGTTTGAAACAAAAGACA
TAGATGGTAGACTTTTATTAAAACATATATGGATGTGGAAAGCACATATATTAATGCAGT
CATCCCTTTTTCAGGTGGGAAGAGAGCAAACCAGTTGATTTTTTTAATTCATCCTTAGTACA
CAGAGAATATCTTTTTNCTCAAGGAATATACCCTGGTTGGAGCTTTAAAAAAGAATGGTTT
TGGGAACCATTTCATTTTTTCCCAANAAGGTTGCTATTCTTGGGGTAANTGGGGNATACCN
GANTGNTTTTTCCNGGGGGGGTTTTGGTGGTGGGGGGTAAAATTGGGGNTTTTTTTTTT
Sequence 1953
GCGCCGAGGGGTGTAATGCATTNGCAGCAAGAGCTATGAGAAATAACTTTAGACATTATT
TCATTGAACCTTCCCAACTGAAATTATTTTATGATGTTATAACATGGATAGTAACTCAAG
TAGCAATAAGTTACACAGTTGTGCCATTTGTGCTTCTTTCTATAAAACCATCACTCACGT
TTTACAGCTCCTGGTATTATTGCCTGCACATTCTTGGTATCTTAGTATTATTGTTGTTGC

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CAGTGAAAAAAACTCAAAGAAGAAAGAATACACATGAAAACATTCAGCTCTCACAATCCA
AAAAGTTTGATGAAGGAGAAAATTCTTTGGGACAGAACAGTTTTTTTACAACAAACAATG
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GGCTCTGAGGGCTGTTTTTTTTTTTTGATGTTAACAGAAACCAATCTTAGCACCTTTTCAA
GGGGTTTGAGTTT
Sequence 1954
TCGCCCCGCGTCCGGTTAAAACTGCCTCTTTAGATGTGGATGCCTTAATGCTGTAACACA
TTTGAAAACATTGGCAATACTTAAGTTGCTGCCATGATTACAGATGGAATTATTGGCTAC
CAAAGAGACGCAATTGATGATGAGAAGCATGATTCTTGCTTCCATATAACCAAAGTTAAT
CTTAATTGCAATTTGACTCCGTTTCCTTGGTAGGGATAGACTTTCTTCAGATTCCAAGTG
CTCTCTTAAATGGCAAATTAAGTTAAAGAATACTACTGCTCCATTCCCCTCACTTATTCT
CCAGTTAATTGCTTGTCAGTTCCATTTCAAGAAAGCAGTGGATGTTCCAGGTTTGATTCA
GTTTTCCTGTGCACACTATTGCCAAATTTTTTTTTTAGCAAAGATTCTGCACTGGAACGTA
GACAGTTGGAAACAGTACTACCTACTAGAGGGTATGGGGTTTCTCTTTCTCCCCGCTTTC
ACCTCTTTCTTTTCCAATTC
Sequence 1955
CCNCGCGTCCGGCTCTGCCCAGTCACCCGGTCTCCTCCGGCTTCCCTCCGGCCAACAGCG
CGCTCAGGCTCGCCTCAGGCCCCTCCAACGGAACAGGAGTCGAGGGGCAGTGAGGCCGGG
ATGCGTGCGAGCGCGGGGCGCGGCTGGCGCTGGGCCGTGGGGGCGGGGCGGCGTGCGTGC
CAGCGGCCGTGCGATTCTGTGAGGCCTGCTCTGCGCCGGCGGGGAAGCGCGGGCGACGCT
ACGCTGGACGTCCTTACCTGCCGGAGGAGAGAAAGTGCCGTCAGCTGTAGGGG
Sequence 1956
GCGTCCGCGGACGCGTGGGCGGACGCGTGGGCGGACGCGTGGGCGGACGCGTGGGCGGAC
GCGTGGGCGGACGCGTGGGCGGACGCGTGGGCGGACGCGTGGGAGAATGTGCTATACCCC
AGAAATTCCATCGATCTGTCATGGGCCCCAAAGGTTCCAGAATCCAGCAGATTACTCGGG
ATTTCAGTGTTCAAATTAAATTCCCAGACAGAGAGGAGAACGCAGTTCACAGTACAGAGC
CAGTTGTCCAGGAGAATGGGGACGAAGCTGGGGAGGGGAGAGAGGCTAAAGATTGTGACC
CCGGCTCTNCAAGGAGGTGTGACATCATCATCATCTCTGGCCGGAAAGAAAAGTGTGAGG

Sequence 1957 .
CCACGCGTCCGCTGGAGGCACTGGACGAGATGCTGACGCACGACATCGCCAAGCTCATGC
CCCTGCTGCGGCAGGAGGAGCTGGAGAGCACCGAGGTGGGCGTGCAGGGGGGCGCTTTTG
AGGGCACCCACATGGGCCCGTTTGTGGAGCGGGGACCTGACGAGGCCATGGAGGACGGCG
AGGAGGGCTCGGACGACGAGGCCGAGTGGGTGGTGACCAAGGACAAGTCCAAATACGACG
AGATCTTCTACAACCTGGCGCCTGCCGACGGCAAGCTGAGCGGCTCCAAGGCCAAGACCT
GGATGGTGGGGACCAAGCTCCCCAACTCAGTGCTGGGGCGCATCTGGAAGCTCAGCGATG
TGGACCGCGACGGCATGCTGGATGATGAAGAGTTCGCGCTGGCCAGCCACCTCATCGAGG
CCAAGCTGGAAGGCCACGGGCTGCCCGCCAACCTGCCCCGTNGCCTGGTGCCACCCTCCA
AGCGACGCCACAAGGGCTCCGNCGAGTGAGCCGGGCCCCCCTT
Sequence 1958
ACGCGTCCGCCTGGCTAACATGGCCGAAAGGTCGTATTCTCCGGGGGAGGACGGAGGCCC
GGAGAGGAGGGGGTGGAGTGCCTGGTTTTCCAGTCAGGCGGCCGGAGGGCAGCCCTCAAG
AACGGCCCTGACCGCCCGCGGGGTGAGGGGCCCTTTCTGGGCAGGACCCGCCCCTTGGTC
CCGCAGAGCCTTGGTACTTGGACCTGAACCTTGCTCCGAGAGGGAGTCCTCGCGGACGTC
AGCCAAGATTCCAGAATGACTACTATCTTGACTTACCCCTTTAAAAATCTTCCCACTGCA
TCAAAATGGGCCCTCAGATTTTCCATAAGACCTCTGAGCTGTTCCTCCCAGCTACGAGCT
GCCCCAGCTGTCCAGACCAAAACGAAGAAGACGTTAGCCAAACCCAATATAAGGAATGTT
GTGGTGGTGGATGGTGTTCGCACTCCATTTTTTGCTGTCTGGCACTTCATATAAAGACCTG
ATGCCACATGATT
Sequence 1959
CCACGCGTCCGGGGGACATGGTGGTGAGCAGGACAGAATTCCTGTCCTCATGAGTCTTAC

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ATTCTAGAAGGAAGGAGCAGATAAAATCTAAATAAGGTTATGAGATTGTGACGAAGCGTC
CGATTACACCTCAACAAGAAGGCAACTGACAAACAGCCTTATAGCAAGCTCCCAGGTGTC
TCTCTTCTGAAACCACTGAAAGGGGTAGATCCTAACTTAATCAACAACCTGGAAACATTC
TTTGAATTGGATTATCCCAAACCTTTATTTTTCTTCGGTAGCACCAATGAAAAGA
Sequence 1960.
TCCGGTGCAGCCGGGCTAGCTTCTCCTGCATCTCCCGAACGTGCTCCAGCTGCTCAAAGG
AGCNTTCCTTCCCTGGAACGAANCCCCTGNCTGAACCCTNNNAAAGAGNCCTGGAACCCT
GGAACCCTGGAACCATGGNCCCAGCCNTNCCCCANGNACTGGGCCCTACAGCCCTATCCA
CACACCCGCTGAAACCAGCCCCCAGGACTCACCGAAGGCCNGGGGGCGGCCAGAGTGGAA
ATCATTGAGCAGGTTCAGGAGTCCCCCCTCCATCTNATAGACATCAGTCACCTCGGTCAG
GAAGGAGTGCTGCAGGGGCGTGCCTGCAGAGCCGCTTCCACCTCCAGCCAGGACT
Sequence 1961
NGNCGCGGTTCTCGTCTCCTCCCGGCCGGCGGAGCGAGTGGAGGCTGCAGCCCAGCTCGT
CTCGGCGCCCGCGTCGCCGTCNCGAAGCCCCCCGCCCCGCTTCCGCCGCGTCGGAATGAG
CTCCCGGAAAGTGCTGGCCATTCAGGCCCNAAAGCGGAGGCCGAAAAGAGAGAAACATCC
GAAAAAAAATCAAGCAGAAGATTGAGCTGCTGATGTCAGTTAACTCTGAGAAGTCGTCCT
CTTCAGAAAGGCCGGAGCCTCAACAGAAAGCTCCTTTAGTTCCTCCTCCTCCACCGCCAC
CACCACCACCACCGCCACCTTTGCCAGACCCCACACCCCCGGAGCC
Sequence 1962
CGCCCACGCGTCCNNCCCGCGTCCGGGAGAAGATGGAAGCAGTGCCCGACGTAGAGCGCA
AGGAGGACAAGCCCGAGGGGCAGTCACCTGTGAAGGCTGAGTGGCCCAGCGAAACCCCGG
TGCTGTGCCAGCAGTGTGGCGGCAAGCCTGGCGTCACCTTCACCAGTGCCAAGGGCGAGG
TCTTCTCCGTACTGGAGTTTGCACCCTCAAATCATTCTTTTAAGAAAATTGAGTTCCAGC
CTCCAGAAGCCAAGAAGTTCTTCAGCACAGTGCGGAAGGAGATGGCGCTGCTGGCTACCT
CACTGCCTGAGGGCATCATGGTCAAGACTTTTGAAGATAGAATGGACCTCTTCTCAGCTC
T
Sequence 1963
TCCGCGGGNGCGTGGGCGGCCACTCATTTGCATTATCTTAAATCACAAATAATTACTTAA
TTNGCTGGAGTGTGTGCTTTGCAACTTTTATACCAGAGTAAAATTTGTATTTAAAACAAA
AAATAAGAATGCCCATCACTAGGAGAAACACTCCTCACAGAAAACACACACACACACACA
CACACACAATTTAAAAACTGAGTAAATTTAAATGTATGAAAGGCNCCACAAATTGATTTC
AACAAATAAATTTCATTTCTCTAGCTACTTATGTCTGGCCTTATTTTGAGCGTTACAATT
TTATTGCCTTCATTTGCCTATTTAGACTGATGTAGTTTGATATGATGAAGT
Sequence 1964
CTNTAGGGAGNCGACCCACGCGTCCGCCCCGCGTCCGGTTAGTTCTACCTGGTGCCCATG
TTCTGATTGTGTGTGGGATTGCATGGTGTCCTGATTGCATCTAGGTGGAGCGGATGGAAT
GTGCTGGGCCACTGTTGGGTGGAGAGCAGCACATTCTTACAGAGGAGATGGAGCGTTATG
AGCATAGTATGTGGATAGGTATCTTCACCTGCCCGCCCCTGAGTCAGCCTCCTTGACTTG
ATAGCTTGAAGAATCCTTTTCCACTGAAATAGAGGATAATTAATTGACACATCTGAAATC
CCCAATCAATCAATCAAGAGAAAGGTAGAACTAAAAACTCCTTAACTTACTGTTGCTTAC
ACCCCTGAAAGTCTGTTTTT
Sequence 1965
CGTCCGGCGCCCTCCAGCCCCGTCCGGGGAGTCCCCGGCCCGCTGCGGTGCCGGGAGTACC
TCCAACCCCCTGCNCCCCNNANGGAGGCCNAGGGGCTTAGCCACCAGGGCTCGGAAGTGG
GGGCCGAATCCGGTGCNNGNCNNNNNNNAGGNNAGCANAGCCGGAGTTGGGGAGACTGGT
TGCTGAAAAGCCAGGAGTCAAAATGACTGAGCGCTTTGACTGCCACCATTGCAACGAATC
TCTCTTTGGCAAGAAGTACATCCTGCGGGAGGAGAGCCCCTACTGCGTGGTGTGCTTTGA
GACCCTGTTCGCCAACACCTGCGAGGAGTGTGGGAAGCC
Sequence 1966
CCCACGCGTCCGGTGCACTCAACAGAACGGCCCTTCAAATGTGAGAAATGTGAGGCAGCT
TTCGCCACGAAGGATCGGCTGCGGGCGCACACAGNACGACACGAGGAGAAAGTGCCATGT

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CACGTGTGTGGCAAGATGCTGAGCTCGGCTTATATNNNNGACCACATGAAGGTGCACAGC
CAGGGTCCTCACCATGTCTGTGAGCTCTGCAACAAAGGCTTCACCACGGCAGCATACCTG
CGCATCCACGCGGTGAAGGACCACGGGCTCCAGGCCCCGCGGGCTGACCGCATCCTGTGC
AAGCTGTGCAGCGTGCACTGCAAGACCCCTGCCCAGCTGGCCGGCCACATGCAGA
Sequence 1967
CGNCCCACGCGTCCGGCGGTGCCGCGGGGATGGCGGGAGCCGGAGCTGGAGCCGGAGCTC
GCGGCGGAGCGGGGGCGGGGGTCNAGGCTCGAGCTCGCGATCCACCGCCCGCGCACCGCG
CACATCCTCGCCACCCTCGGCCTGCGGCTCAGCCCTNNNNCCNNNNNANNNATGGCNNGN
TCAGGGGGCCTGGGGTCTGGGGACAACGCCCCGACCACTGAGGCTCTTTTCGTGGCACTG
GGCGCGGGCGTGACGGCGCTCAGCCATCCCCTGCTCTACGTGAAGCTGCTCATCCAGGTG
GGTCATGAGCCGATGCCCCCCACCCTTGGGACCAATGTGCTGGGGAGGAAGGTCCTCTAT
CTG
Sequence 1968
GCGTCCGGGCGTGTAAACCAGCCGGAGCGGCGCGGCAGCGGCAAGGACCGCCGTGGCGCC
TAGAGTAGCCGACCCGGGGGGGAGCGCGGGGCGACGCTGGCTGCAGGGACCCGGTGACAGC
GTGAGAGGTTCGCAGAGTACTAGGTTTTGACAAGCTTGCATCATGCGTGAGTATAAGCTA
GTCGTTCTTGGCTCAGGAGGCGTTGGAAAGTCTGCTTTGACTGTACAATTTGTTCAAGGA
ATTTTTGTAGAAAAATACGATCCTACCGATAGAAGATTCTTATAGAAAGCAAGTTGAAGT·
AGATGCACAACAGTGTATGCTTGAAATCTTGGATACTGCAGGAACGGAGCAATTTACAGC
AATGAGGGGATTTATACATGAAAAATGGACAGGGATTTGCATTAGNTTATTTCATTNCAN
GCCCANNCCCAATTTTACGTTTAAAAAACCTGNNNNAAAAAAATTTTTTTGGNTAAAAAN
CCNTNTTGTNTCCCCAAAANTTTTTTTGGGGNANAAAAAANNGGCCCTCCNAAAAAAAAAA

Sequence 1969
CCCACGCGTCCGCACGCCAGTGCCTCCCTTTACCTACTAATGAGGCAAAACTTTGAGATT
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ACATCTNANAATTTTAATGAAGAATTCTTAAGACNGTCTTTCTAAANNACTATTTNGTAC
ATTATGCTTGAAGAANATNTGNGAATTGAGGGAAACA
Sequence 1970
GCGTCCGGTTTTCCAACTGCAGCTTTTTAATGGTTAACCTTCATCTAATTTTTTTTTCTCC
CACTGGTTTATAGATCCTCTGACTTGTGTGTGTTTATAGCTTTTGTTTCGCGGGGTTGTG
GTGAGGAAGGGGTGATGGCATGCGGAGTTCTTTATCTTCAGTGAGAANNGGCCCTGCCCG
CCTGAGAGCCAGCTTNCGCGTTGGAGGCACCGNGTTCAGAGAGCTGCTGAGCGCCACCCT
CTACCCNGCTGACAGACAACACAGACCTGTGCCGAAGGCTAANTTGNGGCTTTTTACGAC
CCTACCCCACCCCCTGTTTTCAGGGGTT
Sequence 1971
CGTCCGGTGAGATTCTCCGTAATGGGCGGGGACAGAGTGCCCTGCAGGAGATTCTGGGCA
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TCTATAAGAACTGGATCAACCAGACTGAGGCCCAGACAGGGCAAGCGCAGCCATCTCCCA
TATGATGTCACCCCGGAGCAGGCCTTGAGCCACCCCGAGGTCCAGAGACGACTGGACATC
GCCCTACGCAACCTCCTCGCCATGACTGATAAGTTCCTTTTAGCCATCACCTCATCTGTG
GACCAAATTCCGTATGGGATGCGATATGTGGCCAAAGTCCTGAAGGCAACTCTGGCAGAG
AAATTCCCTGACGCCACAGACAGCGAGGTCTATAAGGGTGGTCGGGAACCTTCCTGTACT
ACCGCTTCCTGAACCACTTGTGGTGGCTCCTGACGCCTTCACATTGTGGCCATGGCAANC
TGGTGGAGCCCTGGCTGCCCCCCAGCGCCATGCCCTGGG
Sequence 1972
GAGGGGAGGGAAATTTATTTCTCTGCTTTTCTATTATACAAGTTGTTTACAGAAACTGCA
AATTAAAAAATTACACTGGCATTTGCAGTCCTTAAAATAAATTAAAAGTTCTCAACTTTT
TTTTTTTTGCTAAACATTTTTTTTAAGTATGAGTCCTTTGTTTAAAAAGAAANAGATTANA
ACAGAAAATATTTTCTATAAATAATACATGTATTTTGGTTTTAGTGCTCCCGCCC
Sequence 1973

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GCCGACCCACGCGTCCGACATCCCCAGGCACATCCGGAAGGAGGAAGGTTCCTTTCAGTC
CTGCTCCTTCTGCANGNCCAAGAAATTCACTACCATGATGGTCACACTCAACTGCCCTGA
ACTACAGCCACCTACCAAGAAGAAGAGAGTCACACGTGTGAAGCAGTGTCGTTGCATATC
CATCGATTTGGATTAAGCCAAATCCAGGTGCACCCAGCATGTCCTAGGAATGCAGCCNCA
GGAAGTCCCAGACCTAAAACAACCAGATTCTTACTTGGCTTAAACCTAGAGGCCAGAAGA
ACCCCCAGCTGCCTCCTGGCAGGAGCCTGCTTGTGCGTAGTTCGTGTGCATGAGTGTGGA
TGGGTGCCTGTGGG
Sequence 1974
CGCGTCCGCCGAGAGAAGAGGTACGGTCGAAGCCCGGAGCCAGGCCGAGCGGGAGCTGAC
CAGGCTTGACTCGGGTACAGAACGAGGCACCAGTCCCCTTGCGAACCGAAGGGCCTCGCA
GTGGATGGAGGAGGCCCAGCCCTGAGGTCAACGCCAACCAGGCTAGCCTGGCACGGGGCC
TACAGGGTGGGTAGGCGGGCGTGCCGCAGCCGTCCAGGGCCTTCCCTCAGGTCCCGGGCC
GAGGGGCCTACGCTGCGGCCCGGCAACAAGGCCCGACTCGGCCCCTCGGGACCAGAGCCC
CACCCGATCGGAAGCGGATC
Sequence 1975
GGCCTCAGGGGGNAGNNATCCTGCAAAGACNNACATGAGCCCANAGGGGGAAANAGAGNCA
CCTGNGAGTACNNGCCTTTGGGNNTGACCTTGGCTCTCAGCACAAGATATTTACAGCCTN
TGAGCTTGATATTCTAGAATTGNTACAGAGATAGCTCTGGAAAAGAAATAGACTAGAAGG
ATAAAGGGAAGGAATCATAGCTTATGAAGGTTTTTACTCTGCATCAGACCGNTTTCTAGN
NCTATGACTTAACGTCCTATAGGCTGTAAGGTTCTCTGCGTGAACACTTCTTTNCTGGCC
TCCTTTCTGCCCCATTCCTNTTTAAACTCAGTTGCTGAGTTTATTATNCCCTGTGCATCC
CTGGGCATTGNTCATTCACATATGGAAACAATTCANGGAGGACCCTTTGCCTANTTTNCT
TTATCCTCTTGAATTNTGGATGGGAAAAATNTTAANTNCTTTTGGCCGCCTGCANTNGGG
GNAANTATTGGGCCTT
Sequence 1976
CGCCCCGCGTCCGCGTTGAACAGCTTTAAGAACAATGTGAATGAAATCTTAGCAACTTGG
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AATGGTTTAATACTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
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AAAAAANNCTTTTTTTCCCCNNNTTNNAAGNGGGGGGNNGGCCCANCCCCANAAGGGGTT
TTTNAAAGGGGGGNAACCCCCNGGTCCCCGNCCCCAAAAAAAA
Sequence 1977
CGCCNCGCGTCCGGGCTGCCGTAACAATCGCCACAAACCTGGTGACTTAAATAACAAATA
TTTATTTTCTCGTAGCTCTGGAAGCCGGAAGTCCAAAACCAATAACTTGGCAGGGCTGTG
CTCCCTCTGGGAGATCTCGGGGAGCCTCCTTGCTACATGTTCCGCTTCTGGGGACTTCTG
GTGGTGTTTCCCTGGAGGGCCAAGGCCTCCGGGCGGCCCGTGCATTCGGTGAACACCTCC
AAAGAGCTCTGAGTCACAAAGCCTTGGGAAACTTTATTTTATTCTTTCTAGGACATTATC
AGTAGTCCCGAGGAGACATCAATTACAAAACAAAAAAAAAAAAAAAAAAAAA
Sequence 1978
CGTCCCGACAGTCAGCCGCATCTTCTTTTGCGTCGCCAGCCGAGCCACATCGCTGAGGAC
ACCATGGGGGAAGGGTGAAGGGTCGGGAGTCAACGGGATTTGGGCGGTATTTGGGCGCCC
TGGGTCACCAAGGGGCTGGCTTTTAAACTTCTGGGTAAAAGGTGGGATATTGGTTTGCCA
ATCAAATGACCCCCTTCATTTGGACCCTCAAACTACCATGGGTTTACAATGGTTCCNAAT
ATGAATTCCACCCAATGGGCAAAATTCCCATGGGCACCCGTCAAAGGGCTTGAGAAACGG
GGAAAGCTTGGTCAATCAAATGGGAAAATTCCCNATCACCATCTTTCCAGGAGCCGAGNA
TCCCTCCAAAATCAAAGTGGGGGCGATGCTGGGCGCCTTGAGGTACCGTCGTTGGGAAGT
CCACTTGGCCGTTCTTTCACCCAACCATTGGGAAGAAAGGGCTGGGGGCCTCATTTTGCA
GGGGGGGGGGAGCCAA

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Sequence 1979
GAGTGTAGTTACTTCGGTCTTGCCTCACTGGGAGGCCACGTTGGTGACGATGCACACGAA
GCCCCGGTACTTGTCCAGGTTAACCATGTGCCCGTCCGATGTCCTTGGCGGAAAACTCGT
GCATGGAGCGCGCACAGCGCCAGTCGTCCNGGGACGCGCACGGGTCCTGGGACTTGGGAC
ATTCGNGGATCTCCGGTCGCAAGCTGCGGGGACAAGGCTTCTTCCGCCGGCGCCGCGCCC
TCCTGCGCCTGCACGCTGGGGCCTTCCGCCGCCGAGGGGCTCGCGGCCGCTAGACTA
Sequence 1980
CGCGTCCGATCGGAAGTGGCGCTCGTGCATTCAACTTGTTCCCGCTCATGGAACCCCTCT
TTAAAAAGACGCAGGGCACCTGTGAGCGCAGGAGCGAGCCTAAGGCCACCCAGCGGCAGC
GCCCGTGTCCTGGGCACTCAGCGTGCTGGGCAGAGCAGGTGCGATGGCCCCAGTCCTAGC
AGCCCTCGCCCATGTCCTGTGCCCTTACATGGCTCCCGGACTGTGCAGGGAGCCGATACG
TTTGCTGATAGCAATACTGGAACCACCCGGGTGCGATGGCAGTGAGGAGACTGCCCAGTG
CCTTTGGGGCTGTGCTTGCAATAAAGAAAGAATTTCCTGGAAAGGCAGTCTGCAAAAGAG
GGAACCCGGTGACTCAGAAAGACAGGATGTTTTGGTAATTTACCCCNAAATGTGCCATCC
ACCATAGTGCTTTTTCCTCTTGCCCTTCGGCTTGTTTGAATCTCACAATTATGGTATTTA
ATTCTCAAAGAAATATGTATCTGTTAGCCCGNTTGGTGACACTTATACAGATGATTAA
Sequence 1981
CNCGCGTCCGGTCGAAGCGAGGACGTGGTGGGTCCTCTGGTGCGAAATTCCGGATTTCCT
TGGGTCTTCCGGTAGGAGCTGTAATCAATTGTGCTGACAACACAGGAGCCAAAAACCTGT
ATATCATCTCCGTGAAGGGGATCAAGGGGACGGCTGAACAGACTTCCCGCTGCTGGTGTG
GGGTGACATGGTGATGGCCACAGTCAAGAAAGGCAAACCAGAGCTCAGAAAAAAGGTACA
TCCAGCAGTGGTCATTCGACAACGAAAGTCATACCGTAGAAAAGATGGCGTGTTTCTTTA
TTTTGAAGATAATGCANGAAGTCATAGGTGAACAATAAAGGCCGAGATGAAAAGGTTCTG
GCCATTACAGGACCCAGTAGCAAAGGGAGTGTGCAGACTTGTGGGCCCCCGGATTGCATC
CAATGCTGGCAAGCATTGCATGGATTCTTCCAGTATATTTGTAAAAAAAAAAAAAAAAAN
NAAA
Sequence 1982
GCGTCCGTGGTAACGATTGGCCCTAAGAAGCCCCTGCCTGACCCGTGAGCATTGTGGAAC
CCAAAGATGAGATACTGCCCACCACCCCCATCTTCAGAACAGAAGGGTGGGGAAGCCAGA
GCCCGNCTGCCATGCCCCAGCCAGTCCCCACAGCATAACAGGGTCTCCTTGGCAAGCTGT
ATTCTGGAGTCTGGATGTTGCTCTCTAAAGACCTTTAATAAAATTTTGTACACTGGACTT
TAAAGTATTGNTCACAAGGGTTATGCAATTCCNNGNCANG
Sequence 1983
CCCCGCGTCCGTGACAATCGAGTAGTACTCCCGATTGAAGCCCCCATTCGTATAATAATT
ACATCACAAGGACGTCTTGGCACTTCATGAAGCCTGGTCCCCACATTAGGGNTTTAAAAA
AACCAGGNATGGCAATTTCCCCGGGACCGGTCTAAAACCAAAACCCACTTTTCAACCGGC
TTACCACGGACCCGGGGGGGGTATACTTACGGGTCAAATGGCTTCTGGAAATCTGGTGGGA
GGCAAACCACAAGTTTTCATGCCCATCGTCCTAAGAATTAATTCCCCTAAAAATCTTTGA
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AAAAATTTTCAACAAAATAAAAGGCATTTTTTTTTTTAACTGGCATTTCTTAGTTTGGNG
GGGTTTTGGTCCCAA
Sequence 1984
CCGAAAGAATATCTGTGTGCTTAGGGAGGAAACTTTTTGATCTGCAGAAAAGCCAGAAGA
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AAACTTAAAATGGGATATGAAAAGTGAAGAAAGTGATCATAGGGAGAAAAACCATTTCAG
ATGACAAGAGCACCTCAAAGGCAGCAGCCTCAAGGAGCAGCCATGGCCCCAGACTTGTCG
CACGGATGCAGAAAACTTAATGGAGGAGGCTGAGGTCAGAATGGGAAGAGTTTTTAAAAA
ATAAAAAGGGGAGCTAATATGTGAGGGACCAAAAAAAANNNNCANAAAAAAANAAAGTGCCG

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GCCCGCTAGACTAGTCTAGAG
Sequence 1985
AAGCTTCCTGGTTCAAATGTGCCATTTCCCGGGTTGATGCTGCCACACTTTGTAGAGAGT
TTAGCAACACAAGTGTGCTTAAGTCAGGCGGTAGGGAAATCCCTCACTAAAAGCAGGAAG
AAAGGTTCCAATTCAAAAGGTGCCCAATGGATAGGAAGTCAAACAAGGAAAGGGTTAAAT
GGTTNGGAAAACCACAAATCAGGGTGGTGGGATTTGGGTGCTTACTTTTGNAACAAAAAA
GGGTCCCCCCTGGTGGGTCTTTTTGGTTCAAACAATTGGTACAAATTGGTAAGAAACTTC
TTGTCCAAACCACTTAAATTTATTTTTGGTCTTTGGAGGTTTTTACTTACAAAGGATGGA
NGACTATTGGGAATCCCCGGCATGCCCTGGAATTCACTAAAAGCCAAAGGGGGTCTTGTA
AGGCCAACGCTGCTTCTTCTGGAGGACTTTCCATTTCCTTTTCTGGATTGGGCAACACCG
TGCAGGCTCATGGACAAATCTGGTAGGGATAACAAATTCAGTGGTGGGANTTTCCACTTC
TTTTTTCAAGTCCTTTCATGTTAAAAGGAATTTTAAGAACACCCACATACAA
Sequence 1986
GNGTCGACCACGCGTCCGGAGCAGCAGCCATGGCCCTACGCTACCCTATGGCCGTGGGCC
TCAACAAGGGCCACAAAGTGACCAAGAACGTGAGCAAGCCCAGGCACAGCCGACGCCGCG
GGCGTCTGACCAAACACACCAAGTTCGTGCGGGACATGATTCGGGAGGTGTGTGGCTTTG
CCCCGTACGAGCGGCGCGCCATGGAGTTACTGAAGGTCTCCAAGGACAAACGGGCCCTCA
AATTTATCAAGAAAAGGGTGGGGACGCACATCCGCGCCAAGAGGAAGCGGGAGGAGCTGA
GCAACGTACTGGCCGCCATGAGGAAAGCTGCTGCCAAGAAAGACTGAGCCCCTCCCCTGC
CCTCTCCCTGAAATAAAGAACAGCTTGNCCGGATAAAAAATNAAAAAAAAAAAANAAN
Sequence 1987
GCCACGCGTCCGCAGGGAACGTGATTAGTGAAAGGAAGATAAACGTGGATGTTACTCCAA
AACTTCGTTTAATGAATGCTTAAAGAATTCAAATTTTATCTGCCTCTCTTGTAATTTGGA
TCTCTTCTTAATGTACATAGTGCTAACATGAAGACCTTTTTCTGCACTATATGCAAACAG
GGTAACTAACTAAAACAAAGCCACTTTCAATCTTCAATCCTTGAAGGTATATCTAGGTTT
ATGACAGTAATTGTGTTTACATTTTATGGTGCCTAGTATTGACAAAATGTTATTTCCCTA
CATTAAACATGACTCCATAGACCTTTTTCATTTGTGGGGTTTTTATTTCCTATGATGTATA
CTGCCACTAACCTTNCAAAAATTACTTAGTATTGCAAAGTCAGGGAATCATCAGGGAACG
TTTAGCTTGGCCAAAATACTTGGTCTGGTTTTAAAAACCCTGTCNAGGTCTACCAAACCT
GTTCAAGGTCTACCCAATTTTAAGGGGCAAATTTGGGGGNAAAAAGGAAAAAAT
Sequence 1988
GGTGTCGACCNCGCGTCCGCGAGTCCCGCGTTCTCTCCTTGAATCCACTCGCCAGCCCGC
CGCCCTCTGCCGCCGCACCCTGCACACCCGCCCCTCCTGTGCCAGGCAAGGTGACCCC
ATGGCAAGGCGCAAGCCAGAAGGGTCCAGCTTCAACATGACCCACCTGTCCATGGCTATG
GCCTTTTCCTTTCCCCCAGTTGCCAGTGGGCAACTCCACCCTCAGCTGGGCAACACCCAG
CACCAGACAGAGTTAGGAAAGGAACTTGCTACTACCAGCACCATGCCCTACCAATATCCA
GCACTGACCCCGGAGCAGAAGAAGGGAAGCTGTCTGACATCGCTCACCGCATCGTGGCAC
CTGGCAAGGGGCATCCTGGCTGCAGATGAGTCCACTGGGAGCATTGCCAAGCGGCTGCAG
TCCATTGGCACCGAGAACACCCGAGGAGAACCGGCGCTTCTACCGCCAGCTGCTGCTGAC
AGCTGACNACCCGGGTGAACCC
Sequence 1989
CGTCCGACAACATTTGGCATNAGGGTTGTATCTGTTGGTGGAGGACACAACGCCAAAAGG
AAATGGGATTTCCTGGTTAGGCCTGCGGCTTGGCAGATGATTGTTATGGGAAAGACACTG
AGTCTGTTTAGGCAATTTCTTCCTCTTTACTAATAAAGTGTTCCTATTTTGAAAGCAATG
CTGAGTTGTGGACATGTGTATAAACCGTAATGCTGTAAGTTAGGCCTCTCTTGTCTAGAA
TCTCAGCCTCTTCATACTCTCTCCCCCTTTTTTGCCATATTATTTTCCTTATCACTAACT
ATATATTTTACCTGTCTCACTTACTATCTGTCTCTCCTCTCAGAGTGTTACTCCAGGAGG
GCAGAGATAACTGTTTAGTCCAGGCTGTGCCTTTCGGTGCTCAAAATAATGCCTGGGTGC
AAAATAAATATATCTTGAATGAAATAATGAAGTAATCTTTAAAATGGTGCTCCGAGCATA
ATTTTCTATAGTAACACATAGTTTGCAATTAGTTGTCTCTTTCAGGGATAATGGAAATTG
GTCAACATAAGAAAA

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Sequence 1990
NCCCCGCGTCCGAATTTGTTTTATGGATTGAATNATGTCTCCTCTAAAAAGATTTATTGA
TGTTCTAACCCTCCATGTCTCGTATTGTAACCTTATTTGGAATAGGGTTGTTGCAGAAGT
AATTAGTTACATTAAGATGAAGTCATGCTGGAGTAGGGTGAGCCCCTAATCTAAGAGGAC
TGGTGTCCTTATAGGAAGAGGAAAATGCCACATGAAGAGAGAGAGAGATGCCCAAGGAGG
TGTCATGCTGCAATGAGGGCAGAGATTGGAACTGTGCAGCTGCATGCCAAGGAACACCAA
AGATTTCAGCAAACTACTGGAAGCTAGGAAAAAGCAAAGAATTCCCCTAAATATTTCAGT
GGGAGCATAGCCCTGCCAACACCTTATTTCAGATTTCTATCCTCCACAACTATGAGGCAA
TAAGCTCTGCTGTTTTAAGCTCCTCAGTGTGAACTATTTTTGTCATGGCAGCCTTAGGAA
ACTAACACAATTTACAAACAGATTAAGTTCACTAATCAAAAGACAGCCCTTGCAATTGGG
GTTTTTTTTTT
Sequence 1991
CCGCGTCCGGCGGGTGAGCCGCTGGCGCGCCGGGCCGGGCGGGGGATTGGCTGAGGGCGA
CGCGAGAGAGGGGAGACCCGGACTGAGGAGAGGACGGGGTGGAGGGTCCCGGCCGGAGGC
TAGCCTGAGGAGACCGGGGGCGGAGGGGAGACCCGGGCCGCGGAGGAAAGGGATGGAGGA
GAGGAAGCCGCCGGGCGCCAGCGGGACCCCCGGGCTGAGGGGAGAGGCGCCCCAGGCCGG
GTGAAAAGTGGCCGAGGAGACCTGGGCTGGGCTGGCAAGTCCCGGACCGGGGAGGAGGGG
AGCAGCCCTCCGATGTGAGGGATCGCAGAGGAATGAGCTTCGTTCTGGATTAAAAAAAAA
AAAAAAAAAAA
Sequence 1992
GTCACCACGCGTCCGCAGCGCACGCCCCNTGCCCTGAGAACAGGAAAGGGCCCGGAAGGG
CTGACTCACCGGGCCGACNCTCACACGAAAATGGGATGCACTTTATTTGCTGGTGCAAAG
GCAGGTGAGGGTGCCTNCTGNGTGACCGNTGGCCCTNCTGCCTGGNGGCGCTGAAGGGAA
GGAGCCAGTGAGCCTGACCCCGGGAGGGGCCGTCCCCGTGTGCCGCGTTNGGCGGGGCCC
CACGCGGCTCCCCCANGCCCGGGTCTGGGGCCCCAGGCTTTCCCCTGNCTNGNGGNCGNN
CNTNCCNNGCTTTGGGNTNCTTGNNTNGGNNTTTTTTAATGCCAGNNNTCANNACATAANT
GCNTTNTGAAAGAGGTTCCAGCTATCACTTGTAACCATATATATATACATATATATTCTA
TCTACAAAGTGTTTATTTNCAAAGATNTTTCAACGGTGAATTCAGTCCCCGGCCGCCCTT
NTGACCATCTGTNCCCNGTCCTTGTCCCCGCCCCGGGG
Sequence 1993
TCNCCNCGCGTCCTTGATATTTTGAGAAAAATCATGTGAGTCATTTTTTCTGTTTCTCTT
TTCTCTTAACGATTATCACTGTAATTCTGAATCTGAAAGGTAAAACAATTAGTCAAAATA
TTATTGCCATCATTCTACCTGTGTTATGAAACTACTTATTCATAGTTAATTCTCATTAAC
ACTTACATTTCCATAAAGAAAACTCAAGTATTAATAAAAGAGACTTTACTGGCTTAAGAG
GGCTGTGAAAGATTTTTGATAGTGAATCATGACCCTAAGGGAGAGATTTGTGTGATAAAA
GTATTGTATATAATAGATCAGCGATTTTTGTAAGGCAAACAGAATTTGTAAGTTGGCAGA
TCTTCCTAAGTTGCAAAATGTAATGATGAGCTTGGTGGGAGAAGAATGAGTCGTTCTTGG
AATACCTATGTGCAGCCACTACCCATCTCAATGTCACCTTGTTTGCATTCTTGGATAGCT
TGTATATGTAGTAGTTTGATGAATAATTTAAAGAAAAACACCTAAAATTTGAAAAATGAT
TGTAGGGATCAAAAAAGGCAGATGAAATTAC
Sequence 1994
CACGCGTCCGCTGACCTGACCCNTTCCTGATCCNAGGCCNGGTGGTTGTCTTATTGCACC
ATACTCCTTGCTTCCTGATGCTGGGCAATGAGGCAGATAGCACTGGGTGTGAGAATGATC
AAGGATCTGGACCCCAAAGAATAGACTGGATGGAAAGACAAACTGCACAGGCAGATGTTT
GCCTCATAATAGTCGTAAGTGGAGTCCTGGAATTTGGACAAGTGCTGTTGGGATATAGTC
AACTTATTCTTTGAGTAATGTGACTAAAGGAAAAAACTTTGATTAAAAAAAAAAAAAAAAA
AAAAAAAGTGCGGCGGCCGGGCGCGCCGGGGTGGGCGGCGAGCGGAGCCGGCCGGAGCGG
GCCGGGCA
Sequence 1995
TCCGACNAAGGAACAAAAGCGAAACACACAAACCAGCCTCAACTTACACTTGGTTACTCA
AAAGAACAAGAGTCAATGGTACTTGTCCTAGCGTTTTGGAAGAGGAAAACAGGAACCCAC

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CAAACCAACCAATCAACCAAACAAAGAAAAAATTCCACAATGAAAGAATGTATTTTGTCT
TTTTGCATTTTGGTGTATAAGCCATCAATATTCAGCAAAATGATTCCTTTCTTTAAAAAA
AAAAAATGTGGAGGAAAGTAGAAATTTACCAAGGTTGTTGGCCCAGGGCGTTAAATTCAC
AGATTTTTTTAACGAGAAAAACACACAGAAGAAGCTACCTCAGGTGTTTTTACCTCAGCA
CCTTGCTCTTGTGTTTCCCTTAGAGATTTTGTAAAGCTGATAGTTGGAGCATTTTTTTAT
TTTTTTAATAAAAATGAGTTGGAAAAAAAATAAGATATCAACTGCCAGCCTGGAGGAAGG
TGACAGTCCAAGTGTGCAACAGCTGTTCTGAATTGTCTTCCGCTAGCCAAGAACCTATAT
GGCCTTCTTTTGGACAAACCTTGAAAATGTTTATTTAAA
Sequence 1996

ACGCGTCCGAAGAGGTATATCCCATACCTTTTCCCCAAATTCCCTTGTCATTAATTTTCC
AATTATGCTTCTTCCAAGTGCCTGACCATCCAGCCAAACCATTGGCTACAGCCCATGAAT
CAGTATACAATGGCGCTACTGGTCATTTCTCTTTCCATACAAAGTGCACAACCTGGTATA
CTCTTCAAAGTTCTGCCCACTGGGAAGATTTGCCTTCACCACTGTCCTTCAGGGATAGGG
GCTATAGAGCTGCAGCTGTCCACTTTCAGGTGGTGCCTGCATATCGTGCATAACCATCTG
TGAACCAAGCCCTAGTCTTGTCTTCCTCTGTCAACTGATCATAGGGAACTCCCCATGAGG
CCATCAGTGCAGGCTAAGGGAAAGAAGGCAAGGTGGCAGGAGTGGAGACCATGGACATTT
GAGCTACTTTCTTAGGTAACTTACTTGTGTCTTCAGGACCTGCTCAAGCCAGATCACATA
TATACCACTTTAATT
Sequence 1997

CGCCNCGCGTCCGCTACACTTAAGGATGAAGAGAGGAAAAATCTACAGTGTAGGCACAGA
AATGCCTAGAAATGAGAGAAAAAAAAAACAGGAGCGCATACTGCCTCAGAAACACCAAGA
GTAGTTTGGGAAGAAAGGAGTCAACAATAACAACTATCAAAGGAATGAATGGCCAACAGT
GTAGCCTCAAGTAGGGTAGTGTGAGTAGTTGATAGACCAAAAATCCTCAGCAAAATACTA
GCGAACAGATTCAACAGCATACTGAATGGATTATACACCATGGCCAAGTGGGATTTATCC
CAGGAATACAAAGGTAGTTCAGCATTAGAAAATCAATCAATGCCAACACACCTCATTAAC
AGAAAAAGTAAAGAACTGCATACATGATCCCACAATTGATGCTGAAAAGGCATGACAAAA
TCCAACATGCTTTCATGATTTAAAAAAAAAAAAAAAAAAAAAN
Sequence 1998

CCACGCGTCCGCACACTTGACCCCAGAGATCACGCCACTGTCAGCTGCCCTGGCTCAAAC
AATTGCCCAGGGAATGGCACCTCCACCTGTCTCCATGGCTCCTGTGGCTGTATCTGTGGC
TCCTGTGGCCCCTGTGGCTGTATCGATGGCCCAACCCTTGGCAGGAATCACAATGAGCCA
CACCACCACTCCCATGGTGACTTACCCTATCGCTTCCCAGAGCATGCGCATCACGGCCAT
GCCACACTGATGGGGCTAATGGACACTCCCCTGGTATAGCCTCGCAGGGCTGGGGTCAGG
GGGCCCTTGCCCACTCACCTAGCCTTCCCCATCCCTGTCTGAAGGGCTCCCTTGAGAACT
AGGACAAGAGACTACAAGGAGTATGTCCTGAGGAGGGGTTGGGATGGTGTGGTTTTCTCT
CACCTCCCTTTTATGAGGGTCCTCTTGTCCATCTTCAAGCCTCACAGTGGGGGGCTT
Sequence 1999

NNGGCAGGAGAGGTTCAAATGCATTGCATCAACCTACTATAGAGGAGCTCAAGGTAATGG
GGCTGGGTGAAGTGGGGTAGGTGGGTCTCAGAGTGCACATGGCTTCTCATATGGAGCTGG
AAGGATTGGGGAAATGAGCAGTAGTGTCTTCCCTGTCAACCTGGGGCTGTTTNTGCCACT
CTTCCAGCCATCATCATTGTCTTCAACCTGAATGATGTGGCATCTCTGGAACATACCAAG
TAAGTGAGCATCCTGCAATATAATGGGAGGCTCCG
Sequence 2000

ACGCCTCCAGCCTGGGCAATAGAATGAATGAGACTCCATCTCAAAAATAAATAAATAAAT
AAAATACTGAGAAAAAGAATCTTTATTGTTTCCTGTAAAATAAATTTTCCTTTTAGCAAA
GCTCTTTTCCCTTTGACTCTCGCCGCCTAGATTTCGGTACCAGGACCACACATTTTTAAA
GATGCTCCTCACCGCCGTACAGCTCCTGTACAGCCCAGAAAGCTCCGTGCGCACGAAGCT
CATCCAGCTCCCGGTGGTCTACGTGATGCTCATGCAGCACTCGCTGTTTCTGCCGACTCT
ACTGACGTCTGACGGAGAGGAGAGCCCGGACAGCCAAGTAAAAGGTGACCCCTCACCCCA
GCCCTTCCATTCCGTATCCAGATTTTATCTCCTGATTTCCTTA
Sequence 2001

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CCCGCGTCCGCCGAGATGGCGCCCCTGCACTCCAGCCTGGGTGACAGAGTGAGACCTTGC
GTTTAAAAAAAAAAAAAAAAGGAAAAGGAAAAAAAAAGTTCTACTGTGGGTAAAATGCTATC
ATGCTATCAAACAGCATCACATGCTACAGAGAAGTCTTGTGAAAGGATGTCAGTGTGGCA
AACTTCATTGTCTTTTAAGAAATTGCCACAGCTATCGTAATCTTCAACCACCACCACCCT
GATGAGTCAGTAGCCATCGTTAACGTTGGCGTAAGACCCTCCACCAGCAAAAAGATTGTT
AGCATTTTTTTTAGCAGTGATGTATTTATCAATTATACATAATGCTATTGTACACTTCTTA
ATAGACTATGGTATAGTGTAACCATAATTTATGCACTGGGAAACCAACAAATTCATGAGA
TTCGCTTTATTGTANTTGCTCTGGAATTGAGCCTGCCCGTGTTTCTTGAGGTATACCTGT
GTATTAGGTATGTTCCTTGTATATAAAACCCCATTTTTTAGGGTAGGAAACTAANGCTTA
GAGTTTGAGCCAATTTTTCCCATA
Sequence 2002
CGTCCGCACTGTTCAAACCCTGTCATGCTTTAAAACTGATGCGAGATGATTTTGTTTTTT
GCATAATCAATACTTAAGGGTGCAATCAACTGTTAGTAATTGTGCAGTANAGTAAAGCCC
TGTGGTGTATCAACTACTAGTTAAGAGTCTCAGTTGATTTCTGTAATGTTTGACCTAATA
ATAGCCCGTTTCGTCTCTGACCCAACAGAGGAAGCACAGATCAAATCACCTTGGAGTGGT
CACCAGGGGGACAGGGAGCCCCCCACCAATGTATCAATGGGTGATTTATGATGCCTTCTG
CCCTTTGGCGAGTGAATGGGTTTCCCATAGGGGAAGTTNGGCCTCCCTCCGTGAGCTTTG
GAAAATGTTTTTCTAATAGACACAGGGGAGGCCAGTTTTTGTTTTNANAGCAATTATTTT
TTCCCAAATTCNTCTGTTTTGGGNGGTNGGAACCTGNGGGGCCCCCGGGGTTTCTGGTTT
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TTTTTTCCCANTCAAAAAAANAAAAAAAAAAAANAAAAAAAAAANGGCGGGGCCCCTTANA
TTTTTTTAAAAAAAAAAAAACCCCC
Sequence 2003
TTNCCATCCCTCAGGTGCTGAGAACCAAAGTGCCTAGAGAAGGGCAGGAGGAGGATGACG
ACGATGAGGAAGACGATGCTGACGAGGAGGCTCCCAAGCCCGACCATTTTGTTCAGGACC
CTGCAGTGCTGAGAGAGAAGGCAGAAGCCAGGCGCATGGCCTTTCTCGCCAAGAAAGGGT
ACCGGCATGACAGCTCAACAGCAGTGGCCGGCAGCCCCCGAGGCCATGGGCAGAGCCGCG
AGACAACCCAGGAACGCAGGAAGAAGGAAGCCAACAAGGCGACAAGAGCCAACCACAACC
GGAGAACCATGGCCGACCGCAAGAGGAGCAAAGGCATGATCCCATCCTGAGACCTGGTGC
AGGGCCAGTGGGGAGGCAAGC
Sequence 2004
TNCACATTTTCCTCCTAAGCACATGGGTCATTCTCAAGGAGAGACCATATGTTAGGTCAC
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AGAAATCAAAACCAAGAGGAATTTTAGAAACTATAGAAGCACATGGAAATTAAACAATCT
GTTTCTTAATGACCAGTGAGCCAATGAAAAAATCAAGAAGAAATTTGCAAATTGTTTGAA
AGAAGTTATAATGGAAACACACTATACTAAAACCTATAAAACAGCAAAAGCAGGACTAAG
AGGAAAATGTATAGCTATTAAAGTGCCTACATTTTTAAAAAATGAAAAAACTTTAGATAA
ATCACTTATCTATGAATTTGAAAAAAAAAAAAAAA
Sequence 2005
CGGGAAGCTTTNTTTTAATTAAGCTGAAACCGAAGCTTTAATTTTAATTTAAATAGTTCC
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GATAGAGCCCAGCACAAACTAATCTGGGCAACAAATCAAAGGGCACAAGTCGCATGTAGG
TTCCAAACTCAGTACATTTTAGAGAAAAGGAGTTTGATTATGTAGTAGAAGGAAGAACTG
CCTGGTGGGACTCATGATCTTCCTTTAAGAGCAAGGCTCAAAGACCTGGGGAGTTTTGAT
TTGATGCTATGATGTCTCCTGGGGCTCAGAATATTATGAAATGAGGAGTGAATCTCTGAG
TGAAAAGAACTCAAGCTGCTTGTTGCATTGCGGAATGTCTCTAAGAGGTAGAGAGGCGTC
TGTTAAGTGGCTTTGTATGAAGGTTTCAGAAGGTAAGATGAGCC
Sequence 2006
NCATTTAACTGTAATAGATATAGAACGTATCCTTCAATAACCAACAACAAATGCTTGTTT
CCAACAGGCTCTGATGGTTGTATATANGGAAACCTTGATACCAATACGTCCAGCTGACCC

TABLE 1
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AGAAAAAAATCAGAGCTTAGTTAAATCACTGCTGCTCAAGGCTGTTGTATCTGGNNACGC
TCGAAATGGAGTTGCACTCACTGCCCTGGATCAGGATCACGTCGCAGTCCTAGGAAGTCC
ACTAGCAGCTTCTAAGGGTAACTGACATCCAATTCATTAAGAAGGCCTTTGTATGTTTCC
TTCACGGTGTACCTTTTAGTCTTCCTTTTNTTTTTCATTTCATTATTACCCAGACTAAT
Sequence 2007

GTCCGGCCCTGCACTAGGGACTGGGGAGGACATGGAGAATAATATATGTACCAGCACAGA
CAGACAGGCAGCTTCTGGAGCCAGACTGTCTGTGTGATCTTGGGTAAGTAATCTAGCCTA
ACCATAGAGATGATAACAATTGTACCTGCCACAGGCTCATGGGGCTATTGTGATGGTGAA
ATGTAAAGATGTAAAGTATAGAGAAAGGATGTAAAACTGCCCGACATATAGTAAGGGCCA
TTTAAAAGATGCCTGTTATTGTCCCTCTTCTTGAGAGCATATTAAGGGCTCAAATCTAGC
CAGAGTCTGGCGGGTACAGAGGTAAACAAATAATGGCAGGTTGGTTAAGTACTGGACACC
AGTGATGTCCAAGGTCTCTAGGATGCCCTGGAGAAATAATGAACTCTTCTAAGATTGTTT
GGAAGGGGATTTATAAAGGACATCTAGGCTGGGTTTTGAGTGAGGTATGGGGAGTTCGCT
GGTCAAGAATGTANGAATTACAAAAGCANAAAGTGCCTTATTTNAAAAAAAAAAAAAAAA
Sequence 2008

NCCCCGCGTCCGGAAAATATTTTAGAAAGCACCTTGAAGATTAGTATTTTTATGTAACTT
CTGTTGGAGAGATGTCTTCAGGAGACTGAAGTAGAAGAGCGACTGTCAAAATGGAAAGTC
CCAGAGACATCCAATTTATGTAAATCAACATCACCTGAATTCAGAATCTCATCCAGATTT
CAACAAAGACTTCTGAATGCCAACAAAGAAGAGGACTGAATTTACAGACTCTCACTCTAA
CAATATATGCTGTTCAATTTGAAAACAGAATAAAATTATTTTGGCAGAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
Sequence 2009

AGAGTGTNCAGCTGGCTTTCCTCACTTGGGAAAAGGGGTACTGCCAGTCTAAGCAGCCTC
CTCTGTACTCAGCCAGGACACCCAGCGCGTGGGACCTGTTTGTGTCTGTTTTGCTTCCTT
GGGAACGGCACAGTCACTCACCCTGCCATTTGCGGAAATGACCTGGTGCACTTTGACTGT
TAAGCAATGCGTTATTGCTGTAGTCAAGGTTAGTGCAAGCAAGGAAACATTCCCAGTAAG
GTATTTGTTTCCATTTTCTGTCTGTGCTTCTGTCAGAAACTTGCTAGGACTTTAGTGGCC
AATAAAAAAGAAATTCTAGCTTGATCGACCCACGCGTCCGGTAATGATTGATGAGGACAT
GACTGCCCGAATTAGCATGGCTGATGTCAAGTTCTCTTTCCAATGTCCTGGTCGCATGTA
TGCACCTGCCTGGGTAGCCCCCGAAGCTCTGCAGAAGAAGCC
Sequence 2010

GCGTCCGACAAACATAATGATCCGTGACAGTGACCTTAATATATAAATGTGTGTGTTGTG
ATTGTTCTACTGACCAGCCATTTCCTGTCTCCCTCTTCTTATGCCTCCCTGTTAAATTAG
ACACAACAACATTGAAATCAGACCAATTAATAACCCTACAGTGGTCTCTGAGAGAGGCTA
ACAGCTAATCCTCTTGTGCTAAACAGCCAAATTGTGAATGCAAAGGAAAAGTTCTCAAAG
GAAATTAAAAGTGCTACTCCAGTGAACACATGAATGATAAGAAAGTGAAACAGTCCGGGC
GTGGTGGGTCACGCCTGTAGTCCCAGCACTTTGGGAGGCTGAGGTGGGTGGATCACCTGA
GGTCAGGAGCTCAAGACCAGCCTGGCCAACATAGTGAAACCCTGTCTCTACTAAAAATAC
AAAAATTAGCTGAGTGTGGTGGTGCACACTTGTAATCCCAGCACTCGGGAAGCTAAGGC
CGAGAGAATCACTTGAACCCCAGAGGTGGACATTGCAAGTGAGCTGAGATTGTGCCACTT
GCACTTCAACCTGGGTAACAGAGAGAGACTCTGTCTCAAAAAAAAAAAAAAAAA
Sequence 2011

GTCTATTAACATACGGAGCTGAATCTGCCGCAGCTNGAAATGCTCAAGAACCAGCTGGAC
CAGGAAGTGGAGTTCTTGTCCACGTCCATTGCTCAGCTCAAAGTGGTACAGACCAAGTAT
GTGGAAGCCAAGGACTGTCTGAACGTGCTGAACAAGAGCAACGAGGGTATGGGGTAGGCG
GGTGAGGGTAACCTAAAGTGGCGAACCTGCTTCTCTCGTCCCACCTCCTAACCCAGTTTT
TCTTACCTGAAACGAGAAAATCCATTACATATCGTATACCGCTTCATGAACCCTTTGCAT
GTTGCCTGCCTAGAATTGAAAAGTACAGGACATTCCTCTGCTCCTATTGCCCCTGTTTCC
GTTCTTTTCACACTGTCTGTGGGTGCTGTGCCCTGTTGGAACTCTCTTTAACGTCTTACC
GTTGGAGCCGCTTACCTTCCCAGGTGTTGTCTTCATTGGCTTTCACAAGGGAAAA
Sequence 2012

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NGGCAGCTGCTTTGTCTGGGAGGGGGCTTTGTGTCGAGTCTCCCTGAATGAGCAGGGCTG
GCGACAGTTGTCAAAACACATGGTGCTTGGTCAGAGCCCCCGTAGAAGCCCCTTGTCCTC
CGCATGGCCTCCGCCTGCACCCGGGGCGTGGAATGTGCTCTTGTGTGTCCCTGGCTGTCT
GCTTGCTTCTACACTGGCCCCTGCAGATGGAGGGGGTGGGGTACAGGGGTTCCTATAAGA
AGCAGACACTTGGGGTTTTTCCCAGGCCCTGTTGCAGGAGGGTGCGTGGGCTGGTTTCCC
TGAAGGCGCCTGGGCCGTGTTGGTGTTAACTGATCTGAGATCTTCTGTGGCCCTGATGTC
TATGAGCATGCCCCAACTTGCANGGGGCTGAGTAGCCCGGGCACCACCAGGAGGCTTGCG
TGCCCTGTGCTTGGGTGTACCCATGCCCTGTCAGCATCGTTGGTCTGTTAGGGGTCAGGG
ACTTCGGCTTCTTGTTTAATACCCTNC
Sequence 2013
AAGTCGGACGCGTCTCAGTTCCTTAAAGCTGTTGGTCCAAGGCTACCCTCAGTTCCTTGC
CACATGGGCTTCTCCAACAAGGCCATTTACATTAACAAAGCCAATGAGAAAGAGAGTTAC
CGGGCATGGTCGCTCACACCTCTTAATCCCAGCACTTTGGGAGCCCGAGGCGGGTGGATC
ACTTGAGGTTAGGAGTTCGAGACCAGCCTGGCCAATATGCTGAAACCCCGTATCTACTAA
AAATACAAAAAAATTAGCCTGGCATGGTGGTGGGCACCTGTAATCCCAGCTACTCAGGAA
GCTGAAGCAGGAGAATCACTTGAACTTGGGAGTCGTAGGTTGCAGTGAGCCAAGATCGAG
CCATTCCACTCCAGCCTGTGCAACAAGAGCGAGATTCCATCTCANACAAAAAAAAGATNA
ANNAAAAAAAAAAAAANT
Sequence 2014
TCCTATTCCTCTCTTGAGTTTATGCACATCTCTATAAATCATTAGTTTTCTATTTTATTA
CATAAAATTCTTTTAGAAAATGCAAATAGTGAACTTTGTGAATGGATTTTTCCATACTCA
TCTACAATTCCTCCATTTTAAATGACTACTTTTATTTTTTAATTTAAAAAATCTACTTCA
GTATCATGAGTAGGTCTTACATCAGTGATGGGTTCTTTTTGTAGTGAGACATACAAATCT
GATGTTAATGTTTGCTCTTAGAAGTCATACTCCATGGTCTTCAAAGACCAAAAAATGAGG
TTTTGCTTTTGTAATCAGGAAAAAAAAAATTAATGAACCTTAAAAAAAAAAANANNAAANA
ACANGTGCGGCnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
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nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnGCATTTTTTTTTNACTGCANTC
TAAGTTGGGGGGGTTGGNCCAAACTCATCAANNNATCNTAATCATGGCTGGGATCCCCNGG
GTCCCGNGCCTCGGAAATTAAATTNCCTTTTTTTCCGGTTTTTCCTTGGGGTTTNAAACCTT
TGNGGNGAAANTTTTTTTTTTGGGGGGGGGGGGGGGG
Sequence 2015
CGCGTCCTGAGAGGTCAGGCCGGTCCTGGGGGGCAGCAAGCCCGGCCACACTCCCCACCGC
GACCGGGGGCTCTGGGCTCGCTTCCTGCTTCAGTTTCCCCAAGCTCCNGATGAGACTCCGC
TACTACCACCACGTCGATAACGCAAACCTAGAGGGACTCAGGGTAAACTGAGGCACTCAA
ACTGCCGAGGAGCTCCGCCTCCCGAGAGACATTTAATCCGGGGGGGATTTGCAGGAAACTT
CTAAATTAAGGGTAGCGGCTGCTGCAGCTGAGGGGGGGGCACACCGGTCCCTGCGCCCGGG
CAGCTGCCGTGAGCTCACGCCCCGAAATAGCCCCAGGGGCCCCAGCCGCAGCTGCCACTG
GGTCCGGCTGTCACTCAGAGGAAGCACGGAGCCCCCAGCCCAAGGGTCCCCTCCCCTTCG
CATCGCGGGGTTTTTCCAGCCGACCGTCGGCCACTTTTTCCTCCGACNGCTGGCAGGGAA
GAGGGGGATTGGGGGCCGGGACCCCAAGGGAGGCGGTCCCCAATGGGTGGGCCAAGGG
Sequence 2016
ACGCGTCCGCACACCCCCAGGTGCCCGCGCTGGCCCCCCAGGCGTGGTGGCCTGCACGGA
GGGGACCCACTTACGTCTGCTCCGTCTGCCCAGCAAAGTTTGACCAAATCGAGCAGTTCAA
CGACCACATGAGGATGCATGTGTCTGACGGATAAGTAGTATCTTTCTCTCTTTCTTATGA
ACAAAACAAAACAACAACAAAAAACAAACAAACAAAAAAGCTATGGCACTAGAATTTAAG
AAATGTTTTGGTTTCATTTTTACTTTCTGTTTTTGTTTTTGTTTCGTTTCATTTTGTACT
ACATGAAGAACTGTTTTTTGCCTGCTGGTACATTACATTTCCGGAGGCTTGGGTGAATAA
TAGTTTTCCCAGTCTCCCTCGGATGGTGGCCTTAAGGCCTGGTAGTGCTTCAAGAGGTCC
ACTGGTTGGATCTCTAGCTACTGGCCTCTAAATACAACCCTTCTTTTACAAAAAAATCTT
TTAAAAAAAAAAAAAAAAAAA
```

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Sequence 2017
CGCTCCGCAGCATCAAGAGTTATTTTTTCTGACTGTCAAGTTTCAACATTCAGGTCTGTCC
CCAACAGGCACCACACCGGGGTGGACTCCCTGTGTAACTTCTCGCCACTGGCTCGGAGAG
TAGACAGAGTTGCCATCTATGAGGAATTTCTGCGGATGACCCGGAATGGTACCCAGCTGC
AGAACTTCACCCTGGACAGGAGCAGTGTCCTTGTGGATGGGTATTCTCCCAACAGAAATG
AGCCCTTAACTGGGAATTCTGACCTTCCCTTCTGGGCTGTCATCCTCATCGGCTTGGCAG
GACTCCTGGGACTCATCACATGCCTGATCTGCGGTGTCCTGGTGACCACCCCGCCCGGCG
GAAGAAGGAAGGAGAATACAACCGTCCAGCAACAGTGCCCAGGCTACTACCAAGTCACAC
CTAGACCTGGAGGATCTGCAATGACTGGAACTTGCCCGTGCCTGGGGTGCCNTTTCCCCA
ACCAGGGTNCNAAANAACTTTGGCTGGGGCAAGAAATNAAANCATATTTGGTCCGGAAAA
AAAAAAAAAAAAAAAAGGGCCGGCCCTTNAACTAAGTCTAAAANAAAAAAACTTTCAAAA
CCTTCCCCTGGAACCTGAAACATAAAATGNATNGCAATGGTGGGNGGTNAACCTGGGTTA
ATTTGGCANCCTTTTTANTTAAAANTTGGGGGGGGGGTT
Sequence 2018
CGGATCAAGACCATCCTGGCTACAGTGAAACCCCGTTTCTACTAGAACTACAAAAAATTA
GCCGGGCGTGGTGGCAGGCACCTATNGTCCCAGCTACTCGGGAAGCTGAGGCAGGAGAAT
GGCGTGAACCTGGGAGGTGGAGGTGCAGTGAGCCAAGATGGCACCAGTGCACTCCAGCCT
GGGCGACAGAGGTAGACTCTGTCTCAGAAAAAAAAAAAAAAAAAAAATCAGTCACTGGAT
TTGGGCCCACCCTACCTNCATATGACCTCATGTTAACTTGATGACATCTGCAAAGACCCC
ATTCCCAAAAAGGTCACCTTCACCAGTAAGTNGGGGGTTAGGACTTGAATATAGCTTTTT
GGTTGATGTAATTCAACCCACAGCACTGCCTTTTNCATTCCATGTTATGTTTTTTGAGAT
TTTTGAGATTTGCCAAATATATGAAGCTATAAATTATCAGNGAAAATAAATAATTTCAAA
ATNTAAGCTGTTGAAAACTCTAAATTATTTTTAAGCCTTTAAAAGAAATGGATTTTTGNA
GACAAGGNCCCGNNNGGGCTTCAATGCCTNTAATCCCCANCACTTTTGANANGGCTGATT
GGGNGNGNGGATTCCACCTTGAGGGTTTAGNGGGNTTTCAAAGACCAAGCCTGGNCNCTAN
CGGNGGTTGAAAACCCCTGGTNNTTCTNACCCTTNAAAAAAAA
Sequence 2019
GTTTTTTTATTTCTACTGTCAAATGATGTGCAAAACCTTTTACTGGTTGCATGGAAATCA
GCCAAGTTTTATAATCCTTAAATCTTAATGTTCCTCAAAGCTTGGATTAAATACATATGG
ATGTTACTCTCTTGCACCAAATTATCTTGATACATTCAAATTTGTCTGGTTAAAAAATAG
GTGGTAGATATTGAGGCCAAGAATATTGCAAAATACATGAAGCTTCATGCACTTAAAGAA
GTATTTTTAGAATAAGAATTTGCATACTTACCTAGTGAAACTTTTCTAGAATTATTTTTC
ACTCTAAGTCATGTATGTTTCTCTTTGATTATTTGCATGTTATGTTTAATAAGCTACTAG
CAAAATAAAACGAGTTGACCCACGCCGTCCGGACACAAGAAAGGAATATAATTCATACAC
TATTGCATTTTTAATAAATCTTTTGAAATTTGCAGAATTAAGATTGTATTGTGTATTTTC
GGTTAAATGATAATTGAATGTAAATATTTAAGATGCAGCACCATATTTTATAACCCAGCT
TTAGGCATTTCTTCATATTTTAAGGGAAACCCCCCACCTCCTTCTTTTAANGGCGCTTCT
TGCTCTCTGAAATGCCCTGCTAAATGCCTTCTCTTAATTATTTGGAATAANGGTAGGTTT
TTGGGGGAAAATTTTAAAAAAAAAANGGGGGGGGNAAAAAAAA
Sequence 2020
AATTTTTNATAATCTGAATTATCACAAAAAGATAAGGATTTTTAAAGTTATTTGGAGGGA
GTGTACACATTGTTTATTTAATAGTGAGGGCTATTATACAAGCNGGTCNATGTAAAATAA
TCCCTTTATATGTATGAGCATAGTTAATTTGGTAAACAACAGACAATTACATACTGTGAT
CATAAGGACTTTAGTATCAGTTACCATATAGCAGGTACTCTTTAGTCAGGATATACCTAT
ATAGGTGCTAAATTAAAAATCAACCTTATATCTCAAATTTACTTCCTAGTAGAGTGTAAC
GCTGCCATAATTGCAAGCCTAATTATGGGGTTGTCCATACTGCAGTCCCATCAGTACTCA
TACACCAAAGGGTCGGGCCTGTGAAGACTGGAAAAAGAATAAAATATCTTTTGATTGAGA
TACTACAAGCAAAAATGACTTTCTGGCTACCATTACTGCAAAGAACAAAACTCAACTGAA
AACAATATGTAGCAATTAAAAAGTCTCATTATCTTCAAAACACAC
Sequence 2021
CCCGCGTCCCGGAACTCTTACCCATAACCCTAATGATGCAAGTCATATGGGGGAACACTT

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TGTAAATGGTCAGGATAAAAACCAAATCTGGGTGCCAGATCCCAGCACTACTTTTTATTA
CTGGAGAAATGGGGGGGGATAGAAAATTCTACTTTGAATTATTTAGTTTTTTTTAAAGAGT
GGGTTGTGTTTGTGCTTCTCCCACCTTTCAAGCATTTATAGAACATGCTGCCCCACATAC
AAAGTCAAGACCACTTACTTTTATGTGACACTAGTAGTTTGGGGTTAATGGTTTGNGTAA
AGAACAAGCTGCATATGAGTAAAGGTTACCCCAACCCNCAGTGAGGANGAAAGATGTTCA
CATACTGGGAACTGTCCTGNCAAATAAATNTGGCCCCTATTGGGCTCTGTTTTAATTNGG
AAGNGGGCAAAAGTAACCTCTTGCTTTGGGGCAACTATTTGGNNTCAAAATTANAAACCT
TTTAGACCCAAANTTNANNNNNNNNAAAANNGNNNNNNNNANGGGGCCGGNCCCNTTNGAC
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AAAGGAAANGCCANTTGGGGGGGGNGGGTAAACCTTGGTTTNATTGGCACNCTTTATAAAN
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CCTTTTTTTTTTT
Sequence 2022
ACCACGCGTCCGGTCTGCAGAGGCCCGGGCCTGGGCACAAAGGGAGAGAGGCCTCCATTG
TCCCGCAGGGGCCAAAATGCAGACCGTGCATCCCCGGTGACCTCGGGGACCGTNCTCTGA
TCAGCAGGATTTTCTTGGACTCTGGGGTCCTTGTCCTGCTCAGGCATCCCTGCCCTGCTC
TCCTTGAGGGCCCTCAACACTATCTTCCCTGGACACAAGTCTGGGGACAGCCGGGTGTTG
AGGACCCCAAAGGGGTGACTACCTGCTCCTGGGCCCCACAGAGTCCTTGTGCTCAGTGTA
GTGGCTGAGCTGGGGGATGCCCTGGAATTCGGAGCACACAGCACTGGCTTACTGTGGTAC
CTGTGCAGTGAAATTGGAGACAGAATCACCAGGATGGAACACAGGTCTTGCAGGATCACG
GAAAACCTTTTAGAGTTGTCTTGACACCACTTGATGTTGAGTGTCCGGGTGTTTGTAGGA
TGGCCTGCACTCAGTCCAGGGGCAGG
Sequence 2023
CGCGTCCGCTTGACCCTGTATTTTGGGAGTCGAACGGAGAATGGAAACTGAAAGTGGAAA
TCAGGAAAAGGTAATGGAAGAAGAAAGCACTGAAAAGAAAAAAGAAGTTGAAAAAAAGAA
ACGGTCACGAGTTAAACAGGTGCTTGCAGATATTGCTAAGCAAGTGGACTTCTGGTTTGG
GGATGCAAATCTTCACAAGGATAGATTTCTTCGAGAACAGATAGAAAAATCTAGAGATGG
ATATGTTGATATATCACTACTTGTGTCTTTTAACAAAATGAAAAAATTGACTACTGATGG
GAAGTTAATTGCCAGAGCATTGAGAAGTTCAGCTGTTGTAGAGCTTGATTTGGAAGGCAC
CAGAATCCGGAGGAAAAAAC
Sequence 2024
CGCGTCCGCAGACTTTCCCTCTGCAATAAATCCTGTAACAAAATTGCACTCGCACCCCTT
ACGTTTATACAAATTTTTAAAATAAATAATAACTAGAAANGCAAGAGGAAACCAAACCCA
AAATTATTAGAAGAAAAGAAATGATAAAGATTGGGGCAGAAATTAATGAATTGATACTAA
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AATCAACAAACCTTTAGCCGGACTGTAAAAGAGAGAATATCCATATGAATAAAATCAGAG
ATGAAAAAGGAGTCATTACATCTGATAACACAGAAATTCAAAATATTTTAGAGACTATTA
TGAGCAACTATATGCAGTAAATTGGAAAACTTAGAAGAAATGGATGAATTCCGAGACACA
TAAAAACATACCAAGATTGAACCATGAAGAAATCCAAAACTTGAA
Sequence 2025
AATTATCCTGGTGTGGTGGCGTGTGCCTGTAATCCCAGCTACGCTGGAGGCTGAGGCATG
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TAGCCTCTTGTGGCAACAGCAAGCAGNTTCCAGAGATGAATACACAGCTTGAGTAGGCAG
GGGGGAGTAGGACATGACGGCTGCCTCATCTTAACACCTTGGGCCTGATAATTTAAAAGG
ACTCACAGTCCTCAGATAAACATGACTTTCTTTTCTCATGAGGAAACANANAAGGTGGCT
AAAGGGTATNTCTTTCTCTCATGATCCCAAACCTATCAGGTTT
Sequence 2026
ACCNCGCGTCCGGGTGCTGTACCAGACCAGAGGCCAGCTCCATGTCCTCCGCGTCGGCAA
TGATACCCACTGCCAACCAACAAAAATTGGCTGCAACCATCCCCTACCAGGACCCGGCCC

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CTACAGGGTGAAGTTCCTGGTGATGAATGACGAAGGACCCGTGGTGAAACCAAGTGGTCC
AGCGACACTCGCCTGCAGCAAGCCCAGGCACTTCGGGCTGTCCCCGGCCCCCAGAGCCCG
GGCACCGTGGTCATCATCGCCATCCTGTCTATCCTCCTGGCCGTCCTCCTCACGGTCCTC
CTGGCTGTGCTCATATACACCTGCTTCAACAGCTGCAGGAGCACTTCCCTATCAGGCCCA
GAGGAGGCAGGGAGTGTGAGAAGATACACCACGCACCTCGCGTTCAGCACTCCTGCCGAG
GGGGCTTCTGAGGGGTTCCAGAGGGGCCCACGTGTCCCTCCACCTCCTCCCTGGCCCAGG
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Sequence 2027
GCTGCTAGAAAAGGTTAGACTAACTGGGAGTTCATAATTTGTCTTGGAGATTTAAGAAAG
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AGTAGGGGAGAGAGCACTTCAGAATGTTTGAAGGTGCTAAGAGGAAGTGCTTGACACACG
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TGTGATTAAAAAAAAAAAAAAAAAAAAAA
Sequence 2028
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GGTGAAGTANTATGTAACATATGGTACAGTTTACTTAAGAGAGAAATACAGATGTATATA
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GTGGAGCTCAGCATCAAGTACT
Sequence 2029
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CATCTTGGTATTATAGCATTAATATTCTCTTTTCT
Sequence 2030
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Sequence 2031
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ACTGTTAAACCCAAAAAAAAAAAAAAAAAAAAAA
Sequence 2032
CGACCNCGCGTCCGGCGTTCTACCCTTCCGGCCCGTGTTCTATCCGCCGCCTCCACCTTC
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GCGCCCGAGCCCGCAATGTCGGGCCCCAACGGAGACCTGGGGATGCCGGTGGAGGCGGGA
GCGGAAGGCGAGGAGGACGGCTTCGGGGAAGCAGAATACGCTGCCATCAACTCCATGCTG
GACCAGATCAACTCCTGTCTGGACCACCTGGAGGAGAAGAATGACCACCTCCACGCCCGC
CTNCAGGAGCTGCTGGAGTCCAACCGGCAGACACGCCTGGAGTTCCAGCAGCAGCTCGGG
GAGGCCCCCAGTGATGCCAGCCCCTAGGCTCCAAGAGCCCCCAACCGGGACCCAACCCTG
CCTCCCTGGGCTAGGCTCTGGCCTGGGCACTCACCCCCTGGCTTAGACACCTTCTCAAGG
GCTGGCCTTCAGGGACCCCTGGTGGGTCTGCTGCCTGGGCCACCCTTCTGCCTGGGCCTN
CCCTTG

Sequence 2033
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GACTACACCAAACGAAGTCTGGGGATTTTTCATTGACCTCCANAAGAAAGAGAAGGAGGCG
CATGCCTGGCTGCAAGCAGGGAAGATCTATTACATNTTGCGGCAGAGCGAGCTGGTGGAC
CTCTACATTCAGGTGGCACAGAACGTGGCCCTGTACACAGGCNACCCCAACCTGGGTGCT
GGAGCTGTTTGAGGCGGCNTGNAGACATCTTCTTCGACGGGGCCTGNGAGCGGGAGAAAG
CTGTGTCCTTCTACCGGGACCG

Sequence 2034
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AAGNNANAAACANNNNAAAANACNNNGGNAACGGAGAAAAGAAAAGAAANNNGNANANA
GAANANNANGAGGGGGNCAAGGNAGAAGAAAANNNGANAGAAGGGGGNNAAAGGGGGNCGGG
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NGAAAGAAAAAAGAAAGAAANAAANGAANAANAGANGGAGANGNAAGGNAAAAAANAANAA
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AAAAAAAAAAAGAAANAAGNGGGNNNGNAAAANACNNAANANNGANANGNANAAAANNGGG
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Sequence 2035
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TACATCCCACAATGTTCATTTTTGTGCCTCATTATACCATGGAATAGTGACATCCTAGTA
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AAATTGGCATATTTAATGATAGAATTCAAAAAAAAAAAAAAAAAAAAAAA

Sequence 2036
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TAACACTATGTTTAGCTGTGTTTATGCTATAAAAGTGCAATATTAGACACTAGCTAGTAC
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Sequence 2037
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Sequence 2038
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AATATGCCTTTTTAGGGTTAAAAAAAAAAAAAA
Sequence 2039
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Sequence 2040
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TGTAAAGTTAGGGG
Sequence 2041
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GGCAGTCACCCAAAAATATCCAAAAAGCCATGAAACAGTANAGGTAAACAAGTANGAAGT
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ATTTTTTGGTCCT
Sequence 2042
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AAAAAAAAAAAAAA
Sequence 2043
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Sequence 2044
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Sequence 2045
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CAAGATNTACAACTCGCAACACCGGGTCAAGCAATCAGCTGCATTCCGGACCGGTGTGNA
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Sequence 2046
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Sequence 2047
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CACTGCACCAGTAATGG
Sequence 2048
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Sequence 2049
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Sequence 2050
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Sequence 2052
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AGTGCCATCTTCCTGCCATACCGAG
Sequence 2053
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Sequence 2054
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Sequence 2055
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AAAAAAAAAAANNAACAANNAATN
Sequence 2056
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TGNTCGGCCGGANTCAAAATTAAGGTTNTTAAAATTTGCCAAAAAAAAAAAAAAAAAA
Sequence 2057
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Sequence 2058
CGGAAGCATCGACCTGCGAGCTCACAGAGCTGGGAGCAGAGCACCCACGCACACCCCGAA
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Sequence 2059
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CGCGGATCTGGCTGNCAACCAAGT
Sequence 2060
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Sequence 2061
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Sequence 2062
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Sequence 2063
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TAAGCACCATCCAAAAAGTCTGCTTCATAATCTATTTTCAAGACTTGGTGATTCTGANAG
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Sequence 2064
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Sequence 2066
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Sequence 2067
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Sequence 2068
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GCTTCTAAAGATTCCAAGGCCNTTCTTCCAAACTTTTGGG
Sequence 2069
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AAGTGACTCTGAAGAAGACGACAAGCCCTGCTCCAGTCACACCCGGAAGCTGACTGGTCC
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Sequence 2070
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Sequence 2071
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AGTCTAAGCCTGGACTCTGCCTTCTGCCCTCCCCCCGCGTACTCAAGCAATAAAAT
Sequence 2072
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Sequence 2073
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AATACAAGTTCAATTGNTGGAATTAAAAGAGTTTCCAAGC
Sequence 2074
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Sequence 2075

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Sequence 2076
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CTTGTCCACCATTATGACTTGTTCCTGCCCTGCCCCAACT .
Sequence 2077
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Sequence 2078
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Sequence 2079
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Sequence 2080
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Sequence 2081
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Sequence 2082
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TCCTCATCTCCCAGTTGGGTGTATCTCCCTGCGGCTTAGGTGAGCGCCGAGGCTTTGGCT
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Sequence 2083
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Sequence 2084
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Sequence 2085
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Sequence 2086
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Sequence 2087
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Sequence 2088
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Sequence 2089
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GGAACAACACACAAACCCCAAANCCGGGGCCANNNCCNNTGGAANCAAAAAAGGGANANG
AGCCGAACACCGNCCCAATGGGGGA
Sequence 2090
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ACAAGAANCAAGGGGGAATAAACCGCCAGGGAAAAGAAACAATGGTGAACAAAAAGGCCC
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Sequence 2091
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Sequence 2092
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Sequence 2093
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Sequence 2094
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CAATAAAAAAAANTAATTCTACCCCTTNANAAAAAAAAAAAAAAAAAAA
Sequence 2095
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Sequence 2096
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Sequence 2097
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Sequence 2098
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Sequence 2099
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TTTTGGAGGTAATTAAGTAACTCTGTATAAAAATAAATGCACTTTTCCCTCCTTTCCCCA
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Sequence 2100
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TTTGGAAATTATCTGTCTGGAAGCTCTGAGTTTATCTTGGGACCTCAAGAGGAGAGGATC
ACCCAACTCACAGCAATCAAACTCCAAATGGTGCTATAAACTGAACCACACATGGACACG
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CGACGCCCCTTTCCAGCAGG
Sequence 2101
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TTNNGGNCCNNAAAAAAACCCCNGGGGCCGNCCCGGGGCCAAGGTTACCTTGGACTTGGAA
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GNGGGTTGGGGGNAAAAAAAANNNNNNNNTTTTTTTTTTNNNNNNNNNCCCCCCCCCCCCN
TTAAAAAANAAAAAAAAA
Sequence 2102
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AAAAAAAAANNNTNNTAAAAANGTTNTCNAAGNNGGGNNNNNCCNNANAGGNANAAAANGAA
AANGNNTNATTTTTTTNTTNAAAAAAAAAAANNTTTNNTAAAANTGTTGNNGGNGGGGGTAGG

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TTAAAAAAAAAA
Sequence 2103
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTCTGTCTCTGTAGTCTCTCCATTCTAAAGTT
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TGGAATGTTTCAATGAGCAAAATAAATTAGACAAANGTTAAAAAAAAAAAAAAAAAAAAAA
NGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 2104
CCCTTAGCGTGGTCGCGGCCGAGGTACCTGACCCCGGTCCTCAAGGAATCAAAGTTTAAG
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TGTCCAACATGGNANTGGGCTACAGGGGAAGAATTGAAAGTGAAGGCATACCTACCAACA
GGCAAACAATTTTTGGTAACCAAAAATGTGCCGTGCTATAAGCGGTGCAAACAGATGGAA
TATTCAGATGAATTGGAAGCTATCATTGAAGAAGATGATGGTGATGGCGGATGGGTAGAT
ACATATCACAACACAGGTATTACAGGAATAACGGAAGCCCGTTAAAGAGATCACACTGGA
AA
Sequence 2105
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GTAAAGAGTAGTAACCTAAAGTTCACCTGAGTAAGCCACTGNGGAGCCTTAAGNGGNGAG
GTCTTCCAATTTNANAGNGATGNGNCTTCAACTTGTATNATNATTTTANGCGGAAAAACA
TAA
Sequence 2106
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TGGCCCTCCT
Sequence 2107
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NACCAACCAACAACCTTAANCTTNGANCTTCACAAANGGCTTGGGGCNAGGGTANCAACA
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Sequence 2108
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TCCTTTTTTCTGTTCCTACGGTGGAAGTAGTTTCTCTTTGGGCATGCTGACAGCACTTTT
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CACTTCTGCCCTGGAACTCATGCAGGTACGTAGTAGCTGCTATTGCCAGA
Sequence 2109
NCGCCTATCACATAGTCAAACCCAGTCCCTGGCCACTGACAGGAGCTCTGTCAGCTTTCT

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TAATAACGTCCGGCTTAATCATATGATTTCACTTCTACTCTATCACCCTACTAACACTAG
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Sequence 2110
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TTGAGCAGGTCGATGATGGCAAAAAATTATTT
Sequence 2111
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CTCTTCTACCCTTTGCCA
Sequence 2114
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Sequence 2115
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TGGCATTGCTANGGNNGGCTANNATCNNGCCACNTGAGGNTGTGGANNN
Sequence 2116
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AANAGGGCCCAAGCAAAAA
Sequence 2117
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CCCANCAAAAAGGCCANNGAACCCGTAAAAAAGGGCCGCNGTTTGCTTGGCCG
Sequence 2118
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Sequence 2119
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Sequence 2120
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Sequence 2121
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Sequence 2122
GGCNAATTGGAGCTCCCCGCGGTGGCGGCCGCCNGGCCAGGTACCCTTGGAAGATGGGAA
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Sequence 2123
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Sequence 2124
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TTGCTATTGCCAGTCCAGAGGTGAATTCTGGGTTCTTTGGCT
Sequence 2125
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ACTGTCCCATGGTGCCCACTGTGTCTGGTCCTTTGGTGAGAGTTCTGTTGTCCTATAGCT
GGCCCCAGAGGAGCTGATGGCTCATGATCTGTTGGCAGCCGCTGAGACAAGACAGGAGGC
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Sequence 2126
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Sequence 2127
AATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTCACGANGTCATATGTTATTTACAATT
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Sequence 2128
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TGGAATGGAATCAACCCGAGTGCAATGGAATGGAGAGGAATGGAATGGAATGGAAGGGAG
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Sequence 2129
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GCAATCCAGGAAGAAATTCCTTGCCAGGAACCAAATTGGTTGTCACCTTCATCTAGGACT
TCTAGCCTCGAGAACTTACAAATGGTGATGATCATCAGGTCAAGGATAGTC
Sequence 2130
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Sequence 2131
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Sequence 2132 ,
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Sequence 2133
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CCTNNNGGGGGNGTTTTTTTTTTTT
Sequence 2134
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Sequence 2135
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Sequence 2136
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GGCTGNNGGTGTGGGGAAACACAAGTCTTTTCCAATTTTTACAAAACGAACCAATTGACC
CCAGGGACTTNTTTGGTTTATTGGGTGGGG
Sequence 2137
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GGAGGGGAGAAAACT
Sequence 2138
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GAAAGAAANG
Sequence 2139
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TTCCCAAAGNCATTANCCGNGGAATTTTTTGTTGATTTTCTNCAAGAAAAAATTTTTCGG
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GGAAAAC
Sequence 2140
GCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCTTATCAGCTAATTGGGCTCCTTT
GAAATGCTGAGGATCTGCTTACGCAGGTTAACTCTTTGAGGAAGGGGGTNGGGTAAGTAG
CCCTTAATGTCTTGTAAATCAAGGGGCCAGATGGCGTTCGTCAGGCTTTCCCAGCTAAGG
GAGAGTCTACTCATATGGGAAACAAGCCTAGGTAATTAAGGAGACAAAAAGGGAAAATTT
AAAAATAGGGTTAGTAAAAACAAGGTTAAAATAGGGTTAGTAAAAAAACAAGGTCAGGCA
TTACAAAAGGATTCTCCTGTCTCAGCCTCCACTGGGATTACAGGCTCGCACCACCAAGCC
CAGTTAACTTTTGTATTTTTAGTACCTGCCCGGGCGGC
Sequence 2141
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTT
NTNAGCAAGCACGTGCACTTTATTGAATGACACTGTAAACAGGTGTGTGGGTATAAACTG

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CTGTATCTAGGGGCAGGACCAAGGGG
Sequence 2142
TGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTCTTACCCTTGTCCCTCTCCTAA
AGGGAGCACAAGGAAACTGAAGAGACTGAAAAAGAAGAGAGTTTGTAGCTGCAAAAGAAT
AGGGATAGCAAGGAAACCCAGAACTGCATTCCCCTAAGTGGGGCCATCCCATGTGATTGA
ATTGTCCATAGCTTGCCTATGGTGAGAAATGTGCATGCTCCGTGAGCTGGTCTCTTGAAA
CAGGACTTATGCTTCCTCTATATTCTGGTTAAATTTTCCAAACACATAAGTTCACTGAGC
ACAGATTTCTTATCCAGAGACAAGTAGAATCTAACCGCAGACTGTTGGCAGAGTTTCCAG
GCACTTAGCCATGTTCCCTTCCTGACTCAAATCCCCAAAGGCCTTCACTCTCACTGAGAA
TCACACTACTGTCCCATAGATAAGGCAGGCATTGAAGCACCTGTCGTGATCCTCTAGGGG
GGAGAATGAAAGGTTATTTTCCTGCATTGCATCATCATAGCTTTTAATA
Sequence 2143
AGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGNGGGNGCNNNGCTCTACAGAATAGAGGCN
ATNCTTTAGCTTAAGCCTGTCTGCTGACCAGAGAATGGAATTNTGCGTGGNCTCANGGAA
CAAAAGGAAACTAGGCAGGGAAGGGGAAGAAAAGTGC
Sequence 2144
GGCNAATTGGAGCTCCCCGCGGTGGCGGCCGNGGNACTTNTTTTTTTTTTTTTTTTTTTTT
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AAAAAATAAATTACAATACAAAAGTGCTNTTTAGGAAGGAGACACTAAACAACAGGCCCA
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GAAATATCCAGTTATAATATTTTCAAAGGNTNGAATTGNGAAGAAAAAAATATAAAATGT
GATTAAAGGATNTNTAGCCTTCAGATGTAATTTACNGGGTTTAAAAATTGGCCCCTTTAA
AACTTTTGCTTTTTTAGACNAGNNNTAAAAAGGCACAATGGAGACNCCATATTGTTANTG
GATTTTCANAACNGGGGGGNTCTTNTGNGNAATNCNTACCANTTTTTTT
Sequence 2145
AGGCACNAGANGANTTTNCTTTTTTTTTTTTTTTTTTTTTNCTGNNATACAAAGAGCAGATT
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AAAAAAAGTTTCCTTGAAATCNGGGAAACAAGACATTTTAAATGAATCAANCAAAATTTC
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TAATTATTCTCTCTGCNTTGATCTTTGGGGGGGACAAGTTTCAATGGAAAGCCTGTCAGNT
TAANTTCATTAAAAGTTT
Sequence 2146
GCTCCCCGCGGTGGCGGCCGAGGTACAAAGGAATAAAAATGTTACAACCTAAAAAAACAA
AACACCGTAAAACATTTAGAGTAAAACATGACAAACGTGCTGCTTTTAGAGGAAAAGAAG
TTTCATTTGAAGAATTTGGACTTCAAGCTACAACATCTCAATGAATAAGTGCAAGACAAA
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TAAAGGTTCAGCTGAAAAATGAGTAGCTGTTGTTAAAGAAAATACAGTTATGTTTGAAGT
TGGTGGAGTTAAAGAAGAAATAGCTTCGTGATGCACTTCGTTTAGGTGGACACAAACTAC
CNTGTTAAATGGAANGAATAATTNNGCANGGGAGGAATAATGGAATTCAAAGATTTAAAG
AAAAAAACTACTGAGCATTTTAGAACCGTTATTAANTTGAATATTAAATCAGAGCTTTTT
ACCCCTTCGTTTTAGAAATTAAACCTCAACCAACTNGGATCATNCCTCNAAAATTCAAAC
AAGGTTAGAAAANGGTTTTNCCCGGAATTTTTACNNCAATTTAGCCACCCAAAAAAAAAA

Sequence 2147
TCCCCGCGGGGCGGCCGAGGTACATNTGCCTGNCTNCCTNCTGTCCTTCCTTTTTATTAT
AAGGATACATTTATAGNACCCCATAGAAGGAAAAGATAAATTTCATAGGCTGNTAAAAGA
GGCTAGGCCTAAGTTATAATGCCTCCTCCTCACAGNCCAATTTNCCCAAGGGGCNTTANC

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ACCAGAGCAGNTTTTCTAGCTTGNGGACAATNCCNNCAGGCTTGAGTGATAATGNCCCNG
TNGCGGTAGCTCTCCACTTGNTNAAGGACCAAANACACCTTAGCAG
Sequence 2148
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTT
TTTTTTTGACTTTATATATAATACTTTATTTTATACAATTCAGTATATCATGTTAACATA
TTTCACTTTTAATTTTATGATATGTGTGACATATTTTTAATTTTATGGATTCAATTATAC
TATCATAATTTTTTTAAAGTTTGTATCTTTCATTAATAAGGAGGNTCCTTATTAATGGAT
TTTTTTTCCTGTAGCTTCTGAGAACACATTTTTAGATACCCGGCTTCTAGTTATACCTGA
AGCTCCACAGTGTAGACATGTTTTGGCCAACCTTGTTTTATCGGTGTATGAAATTTGTGC
TAATAGGATGGATCCAATTGTCATTACATTAGAAAACTAAATGGGAAACATTTCTT
Sequence 2149
TCCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTT
TTTTTTTTTTTTTTGACTTTATATATAATACTTTATTTTATACAATTCAGTATATCATGT
TAACATATTTCACTTTTAATTTTATGATATGTGTGACATATTTTTAATTTTATGGATTCA
ATTATACTATCATAATTTTTTTAAAGTTTGTATCTTTCATTAATAAGGAGGTTCCTTATT
AATGGATTTTTTTTCCTGTAGCTTCTGAGAACACATTTTTAGATACCCGGCTTCTAGTTA
TACCTGAAGCTCCACAGTGTANACATGTTTTGGCCAACCTTGTTTTATCGGNGTATGAAA
TTTGTGCTAATAGGATGGATCCAATTGTCATTACATTAGAAACTAATNGGGAACATTTTT
TTTTACATTNGGGGCAACNTACCAAAATTTT
Sequence 2150
CCGGGCAGGTACACGGGCAAAGGGGCTTGAGAAGGCCCGGNGGCGAAGCCGAAGAGAAGC
AACTGTGCCCCGGAGAAGAGAAGCTCGCCCATTCCAGACTGGGAACCAGCTTTCAGTGAA
GATGGCAGGGCCAGAACTGTTGCTCGACTCCAACATCCGCCTCTGGGTGGTCTTACCCAT
CGTTATCATCACTTTCTTCGTAGGCATGATCCGCCACTACGTGTCCATCCTGCTGCAGAG
CGACAAGAAGCTCACCCAGGAACAAGTATCTGACAGTCAAGTCCTAATTCGAAGCAGAGT
CCTCAGGGAAAATGGAAAATACATTCCCAAACAGTCTTTCTTGACACGAAAATATTATTT
CAACAACCCAGAGGATGGATTTTTTCAAAAAAACTAAACGGAAGGTAGTGCCACCTTCTCC
TATGACTGATCCTACTATGTTGACAGACATGATGAAAGGGAATGTAACAAATGTCCTCCC
TATGATTCTTATTGGTGGATGGATCAACATGACATTCTCAGGCTTTGTCACAACCAAGGT
CCATTTCCACTGACCCTTCGTTTTAAGC
Sequence 2151
CCGGGCAGGTACGCGGGGNANTGCNANANACNCAAANCNNGNTANTACANTGCATCAAAC
ATGTTCAAGATTNNCCAATTGACGGGATTGGATTNAAAGATATNCCACCACTTTTAGCAA
GATGGNGAAGTGCTAAATNACACAATTAATCAACTGGCTGAGTTAGCTAAAGATGCATAT
GTTATTATAGGTCCANACGCAAGANGTTTCTTNCTTGGGACACCTACTGCANCTNTTTTA
AAAAAACCTTTTATTATGGTAAGAAAACCTAAA
Sequence 2152
AGGTACAGCCTCTCGGCCCGGCTAAACATCATCGTCTTGGNNGGCCATTACCCTACCAAC
TAACTAATGTTCCGCACCCCCATTTTTTAAGTGAAGCTGTGAAGCTCCTTTCTATTACTCA
TCATGCGATAAATAACTATATCCGGTATTAGCTATTGTTTCCAATAGTTATCCCAGTCTT
AAAGGTAGGTTAGGTACCTGCCCG
Sequence 2153
AGGTACACTTCTAGCACCTAGCAGAGAGAGGCTTCACTACATNATGCTTCCTGACATCTC
TCCCTTTGAAGAGCAGTCAGACTCCTGCTTTGCTCTTCAGACTTAATTTGGGGGTTTAAC
AGGTGAGGTTGCTGGGGGAACTCTTTTACAACATCTCTCTGAAAGAATCCGGGCTGCCAG
TTTCATTTGGTTTGGGTGTCAGTAGCATGATGGAAAGACAAAAAAACACAACTTGACATC
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AAGTGTGAAGACAAGGCCATCCACCACTTTATAGAGGGTGTAAAAATAAACCAGAAATCA
AGGGAGAAAGAAAAGATGAAAGACAAACTGCAAAAAATTGCCAAAATGCGACTTTCTAAA
AATGGAGCAGATTCTGAGGCTTTGCATGTCTTGGCATTCCTTCAGGAGCTGAATGAAAAA

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ATGCAACAAGCAGATGAAGACTCTGAGAGGGGGTTTGGAGTCTGGAAGCCTCATCCCTTCA
GCATCAAGCTGGAATGGGG
Sequence 2154
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AGGCTGCGTGGCAGGANNGNGNTCAGATTNTCCCCTGCACNGNAATTGGGCTTTNAGGGG
GAAATGGTGGGGCCATCT
Sequence 2155
GAGCTCCCCGCCGTGGCGGCCGCCCGGGCAAGGTACANGTGTGTGTGGGTGAAATGGAGA
TTTGGAATTGAACTCTCTGCCTGTAAATGTTCCCCAAATAATTGTTGTGTGTATGATACC
GTGTATAATAAAAGTATTCTTGTTAGAATCTGAAAAAAAAAAAATGTAAAAAAANNNTAA
AATAAAGGTTCCTTGGCCCGCTNTANAACTAGTTGGATCCCCCGGG
Sequence 2156
CGGCCGCCCGGGCANGGTACGCGGGGACACAAGACATCATCTTGAAGGAAGGATGGCTTT
GGCCAGACCAAGACCGAGACTTGGAGACCTGATTGAGATTTCTCGCTTTGGCTATGCACA
CTGGGCCATCTACGTGGGAGATGGCTATGTGGTCCATCTGGCTCCGGCAAGTCACTGGTG
CAGTCACGACAGTAGGTGTGGCAGCAGGCCTGCTGGCTGCCGCAAGCCTTGTGGGGATCC
TGCTGGCCAGAAGCAAGCGGGAAAGGCAATAAATCCAAGAAATTGTCCCAACAACCACCA
ATTNTTACGGAGGAATATTATTTAGCCAGCAAGGAGTGGAGTTTTGGTTTACTTGATTTT
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GTNTTTTGGAAATTGCACCTTNTTATNGAATTNTTTTTAAAGACACAANTTNGGGCTNTT
CCNAAAAAAAAAAAAAA
Sequence 2157
CCGGGCAGGTACCATTTGGAGTTTAATTGCTTCGCTCCGATGAATGAATTCCTGGCCAAT
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GTTTAGATAAAATGACACAGACACACATGTAATGGTTTTAAGGAGTGGAGAGTTTATTAG
GCAAGAAGGAAGGAAGAAGAAAACAGCTCCCCCATACAGAGACAGAGGGAGGGGGGATTA
GAACAAACAGAAACTTCCCCGCGTACCT
Sequence 2158
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TAATAATCCCTTTTAAATTTTTTTATCNTGTTGCTGTTTACCCTCTNTGAAATATGNATTT
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TCCCTTTTAACCCTTTTTGCTTTAATCATTCCAANTGNGGCANGNAAATTTTTTTTCCTTT
AATNCCCCTTTGGTTGAAGNGGCAANGTTTTGTTTGGAACCTTGGAAGTTT
Sequence 2159
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GAAACTTTTCCATCTCATGATGGATGCTGTTGGGCATGTCCAATGTATGACTTCATGAGT
TACACAGATGCTAATTCGTAGGGGCACTTGGAATCACATGGTTGTTTTGTGTCCCATGGT
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CTCTGCTTTGGATG
Sequence 2160
AGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACATCCCCAGTCGTGGCCCTCTGGACAA
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TCAATTTGAGAAAAAGGACATATGAGTTTTTGCATTTATTAATGAAACTTCCTTTGAAAA
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CCTTATTAATTTTTATATAAATTATATCTTGNCCTAAAAAAAAAAAAAAAAAAAA

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Sequence 2161
ATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCCACGTAAAGACGTTAGGTCA
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AGCCCTTATGAAACTTAAGGGTCGTTGAAAANAAANGANTCANAANTNTANAAAAAAATN
ANGNNCCTN
Sequence 2162
NCCGGNCAGGTACGCGGGGCACAGCGGCTTNCTTGATCCTTGCCACCCGCGACTGAACAC
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CAACNACTGTTTACGCANGGCTTCTGNCATGCTCCCTTTATTTGGAGAATTGNGANTTTT
TCAAGNACAATTNCAATTNCACCAAGTTGTTCTAATNACCTGAAATATCCAACAGANACN
NTTTTTTNAANGAAGTTTTCANTAANACCNNACAANTGGCCNACTTTACNAAAATTGGCCA
TTATTATTGAAATNTGTAANNGNANATTGTTT
Sequence 2163
GACTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACGGGACAACACAAA
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TGTCAAGTATTCCTTCCTCAGGTTTAGGATATCCTGGATAATTTGAGACTGGAGGCTTGT
AAGTAGGCCTAGGACCTGAGGCACTGGACGCTGGAGATTTTGTAGTGGAAGAAGTCGACA
CTTTAAGACACTTTGGAACTGGGGGGATCCCAAGTACTTGTGGAAGGTGGACACCATCACA
TCCAGGGCCTTCTCCAGAGGGCACGCCATGACAGCAGTCAGGATCAAACCAAGAAAGAAG
AAGCGCTTAGGAGAGAGGGGGTTGTAGAGAGGGGGAAAGAATTCCCGCGTACCTTGCCCCG
GGCGGCCCGCTCTAGAACTAGGTGGGATTCCCCCNGGCTTGCCGGGAATTCCNATTTTCA
AAGCTTTNTCGGATNACCCGGCGACCCTTNCAAGGGGGGG
Sequence 2164
ACTATAGGGCGAATTGGAGCTCNCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTT
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GCTCACTGCAACCTCTTCCTTCCAGGTTCACGCCATTCTCCTGCCTNAGCCTCCCAAGTA
GCTGGGACTACAGGNGCCAGCCACCACGCCTGGCTAATTTTTTGTATTTTTAGTAGAGAC
GGGATTTCACTGTGTTAGCCAGGATGGTCTCAAACTCCAGACCTGGNGATCCGCCCACCT
GGGGCTCCCNAAGNGCTGGGATTACNGGCATGAGCCACTGGGCCCNGGCAAAAAAACAAC
TTTTTAAAAAATGGACCCTGGCCCNGGGCGGGGCCGTTTTTAAAAACTAANGGGGGATNC
CCCCCNGGCCTNGCANGGGAATTTCCAANNATCAAAGCTTTTNTTTGGATAACCCGCCNN
CCCCNNTNNGGGGGGGGGGGGG
Sequence 2165
AGGTACAAGATAGTCATCTCAGTAAAAGGTCTATTATCTAACTTGCCAAACTTGTTTACT
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TAAGCAAGATTAGTTTTTCCTCCCTTCCAGTTCCTCAGCAGGCCTGGCTGAAGGCCCANG
AGGGAAGGAAATATAAGAACCAACAATAAAAATAGCAANTNGCAATAAGGAAGAATGCCA
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CCTTTCCATTTGCTCACCGGATGCNTACCGCCTGGGGCCGGGCCCGNCTTCTAAGAACN
TAGNTGGGATCCCCCCGGGGCTTGGCAAGGGAAAATTTCTAATAATTCAAAGCCTTTAAN
TNGGAATACCCCGTNCGGAACCCCTTCCGAGGGGGGGGGGGGGGGCCCCCGGGTTACCCCCA
AGGCTTTTTTTGGNNTTCC
Sequence 2166
CCGGGCAGGTACGCGGNGACGAAGTTCCGGTCCAGGTCTCTGACTTCGGGCTTGTTCGCT
GGTGGCNGTCGGAGCCGAGCCGGACTGGTCAGGATGANCACGGACGTGCAGNTCGCCATC
TTCGACAACATG
Sequence 2167
AGGTACTCCTGGGCAACAGCGAGACTCCGTNTCAAAAAAAAAAAAAAAAAAAAAGAAACCAT
TTATTTTAAAAATGATTAGATTGCTATGCCTCAACTCATAGAAGATGAACCCTTCAAGAA
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NGGAAAAACATTTTNTCAACACCAAATGTTAAAAAGACTTTCCTTTTGNTAAAACCTGGG

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ATTATGAGNAAGAACTTTTTCAATTGGGGTTANNTTCTAGGGATANACTCAAGTATNTTT
GCANCCACCTTAANAAAAACTTGCCATTAGAAAAAACCTGNAAAAGGTTTATTGTTTCCCA
GNATAACTTTTCCGTTGTTTACCCAAATTTTTTTNTTTAAGAACTTTG
Sequence 2168
AGGTACTCCAGGGCTTCATTCATATTTCCTTCCAATTTGTAGACGAACCCAAGGAGGCTC
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AGTTGGAAAATTGNTATGTCTCTGCATTGTTTTCTTCTACCACNTGGNTTTCATCGCNAT
TAAACAATTTTTTTTGAAAAAATTTCTCTTTCAAGCCTTTNTCTGTGGATTGGCCTGCCT
TCTAATATTACCAATTTCCTTGGCCANGGGTTCTTAGGATGTAGCCCACCCTCAAAAATG
TGGGGCCTTTTTTTTTTCCCACCTGGCAAGAATTCAAANAATCGGAAAAATAATGGGGCC
NTG
Sequence 2169
CGAGGTACATTTTNAAAGAGTTGTTTTTTGGCCGGNNTTCAGTGGCTCANGCCTGAAATN
CCAGCACTTTGGGAGGCCGAGGTGGGCGGANCACGAGGGCTGGAGATNGAGACCATCCTG
GCTAACAAAAGAAGAAANCCCGTCTCTACNAAAAATACAANAAAATTAGCCAGGCGNGGG
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GCGGNCCCCTTGCCACNCCCAAGGCNCTNGGGCCAAACCAGAAGGCNAAAGGANCTCCCT
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ANTTGGGCNNCAAATTNATAAGGGNTCAATANNANCNAGGNNTAACCAATAAANNACCCN
CACAGGGGGNNTCCTTTAACCAAACCCNTAAAANNCACCTGGGGTCAAGTCCNAAATAAAA
A
Sequence 2170
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ATNGGAATGAGATCCAAGACTAAACGCNAGAGCTAGATTGAGCCGCATTTGAAANCTCCT
TCCCNTTGGGGCNTTGGCAGAGGGGGAGAAAAGGCTTCAAAGGAACTNGGTGGCATNANC
ACCCCCCTCCCCCAATGAGGACACCT
Sequence 2171
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTCACTGAGCTCAAGA
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AAAGGTNNCATTCCTNTACTGGNGGNCCAAAAAATCAATNGGTTTTGTNTGNCCAAAAAA
AAATATTAAAATTAAAAATATANTTNTNTTGAACTTAAAAAAAAA
Sequence 2172
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ACAAGANCAAGACTCCCATCTCAAGAAAAAAAAAACAAATAAGNAAAAGTACCTTGCCCG
GGCGGCCCGCTCTANAAACTAGNGGATCCCCCCGGGGCTGNAGGGAAANTCTATANCAAA
GCTTANNGAATTCCGCCNACCTNGGAGGGGGG

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Sequence 2173
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTATCCCAGCCCCCCAGGTTCGC
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GCACGGTGGTCAGAATGCAGGGCCTGGCCTACAATACTGGAGTTAAGGAAATTCTTAACT
TCTTCCAAGGTTACCAGTATGCAACCGAGGATGGACTTATACACACAAATGACCAGGCCA
GGACTCTACCCAAAGAATGGGTTTGTATTTAAGGGCCCCAGCAGTTAGAACATCCTCAGA
AAAGAAGTGTTTGAAAGATGTATGGTGATCTTGAAACCTCCAGACACAAGAAAACTTCTA
GCAAATTCAGGGGAAGTTTGTCTACACTCAGGCTGCAGTATTTTTCAGCAAACTTGATTGG

Sequence 2174
CCGCGGTGGCGGCCGAGGTACGCGGGGACTCGCGTCGGTTGGCGACTCCCGGACGTAGGT
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TGCCGCAGTACGCGGGGGGGTGAAGAAGGGGCCGGCCTTCAAGCAACAGCGACGCAAGAT
GGCAGCCACCACGGGCTCGGGAGTAAAAGTCCCTCGCAATTTCCGACTGTTGGAAGAACT
CGAAGAAGGCCAGAAAGGAGTAGGAGATGGCACAGTTAGCTGGGGTCTAGAAGATGACGA
AGACATGACACTTACAAGATGGACAGGGATGATAATTGGGCCTCCAAGAACAATTTATGA
AAACCGAATATACAGCCTTAAAATAGAATGTGGGACCTAAATACCCAGAAGCACCCCCCT
TTGTAAGATTTGTAACAAAAATTAATATGAATGGAGTAAATAG
Sequence 2175
CCGCGGTGGCGGCCGAGGTACCTTAAAGTCCTCCTGGCTCTGAAGCTTCATAAGATGCGT
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ACATTTTCAGGAATACAAATTTTGCACCCTGTGACCTCAAATGCGTGCAACAAGATGTTT
AATACAGAAAATAACACAAAAACTGTTGTTACAGGGGTTAGAATTTTTAACTTTA
Sequence 2176
CCGCGGTGGCGGCCGAGGTACTTCTTACAGTCTTCAGGAAATTCATTAAATCAGTGCCTC
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GGCTTGCAGGAATCAGGATGTACTGTTCCTGTTGGCCGAGTGGAGACTGGTGTTCTCAAA
CCCGGTATGGTGGTCACCTTTGCTCCAGTCAACGTTACAACGGAAGTAAAATCTGTCGAA
ATGCACCATGAAGCTTTGAGTGAAGCTCTTCCTGGGGACAATGTGGGCTTCAATGTC
Sequence 2177
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AAAAAAAAAAAAAAAAAGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAGGTCCGGNNCANTCGNG
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ANCCCCCNTTTTTTTTTTTTT
Sequence 2178
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CACTATGCACTTTTTCTGAAATATTTTTGTAACACTTTTTTGTATTTTTGCCATTTGAA
Sequence 2179
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CTTAAACACCAAAGGATGTGGGGATGTTTTCCAGATGTTCTTTGGTGTANAAGGACAATG

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ACATCAAGAGTNGTTGAANGTATCTTGCCACTGNTGGCCTTTTGATTTTTTTNTCCCACTT
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Sequence 2180
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TT
Sequence 2181
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Sequence 2182
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CAATGACCAAAGTACCTGCCCG
Sequence 2183
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GAATAATGGAATAAGGACCGCGGTTCTATTTTGNTGGTTTTCGGAACTGAGGCCATGATT
AAGAGGGA
Sequence 2184
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AGTGCTAGCAAAAATG
Sequence 2185
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Sequence 2186
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Sequence 2187
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Sequence 2188
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AAAAAAAAAAAAAAA
Sequence 2189
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AAGACCACAAAGAAAGA
Sequence 2190
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AGGAAAGCCAA
Sequence 2191
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Sequence 2192
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AAAGCACTGAAAAGAAAAAAGAAGTTGAAAAAAAGAAACGGTCACGAGTAAACAGGTGCT
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GTCTTTTAACAAAATGAAAAAATTGACTACTGATGGGAAGTTAATTGCCAGAGCATTGAG
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GGGGGAAAGACCAAAGGA
Sequence 2193
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Sequence 2194
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AATTTAAAANCCCANTTTNAAAAAAAAAA
Sequence 2197
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GTGGCCATAGGTGGCTCCTATGGACGGAAAACAGTCTTAAGAGGCAACTCCGATGGTACC
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Sequence 2198
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Sequence 2199
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Sequence 2200
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Sequence 2201
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Sequence 2203
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Sequence 2204
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Sequence 2205
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Sequence 2206
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Sequence 2207
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Sequence 2208
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Sequence 2211
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Sequence 2212
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CA
Sequence 2213
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GCTGCTGTTATGTGTTTATGTTTCCCTTTTTTTTTTTAAGTTTTGAGGGTAGATCGNGTCAC
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Sequence 2214
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GGGCTGGGTCCCATGNGCTGNGCCCACAGTCTT
Sequence 2215
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AACTTCCCGGAAA
Sequence 2216
CCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTATACATTAAATATTTATTAA
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TGGGCCCTTTTTTTTTTTT
Sequence 2217
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GTATGCCAAGCGTGCCTTTGTTCACTGGTACGGGAAGGATTCCTGCCAGGGTGATTCTGG
GGGTCCGCTGGTATGTGGAGACCACCTCCGAGGCCTTGTGTCATGGGGTAACATCCCCTG
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Sequence 2218
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CTTCCAGGTTCACGCCATTCTCCTGCCTCAGCCTCCCAAGTAGCTGGGACTACAGGTGCC
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Sequence 2219
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GTACCTGCCCG
Sequence 2220
CGACTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTT

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TTNTNNTTTNTTNTTTTTTTTTTTTTCCCGGCCATATTCCATTNTTTNANAACTTGAATTG
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Sequence 2221
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GGTGCCCCACACAGGACACCG
Sequence 2222
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Sequence 2223
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Sequence 2224
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AAACAAACCAAAATTTAAATGATCAGAATTGGCAAGCACAAAGAAAACGCCCTNTCCTGA
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Sequence 2226
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Sequence 2228
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Sequence 2229
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TNATTAAAACCAATCCCCCAAAT
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GGGGGGGGCCCCGGTACCCAAGCTTTT
Sequence 2233
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GAGGGGCAGTTCCGGGAGGAGTTTGTGTCCATCGATCACCTCTTGCCAGATGACAAGGTG
ACT
Sequence 2234
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AATCCCAAAACACACAATGAGGCTGGCTCAGGTTTGACTCTATCTTGGAAAAAAATAGGA
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CATTTCCATTTTTGGAAACGGGTAG
Sequence 2235
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GGAACGCAGTGTACCT
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Sequence 2239
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Sequence 2240
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GACCCAGTAGA
Sequence 2242
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CTCAGTGGTGAGTGTTACAGNTCCATTAGAGAAACATGCAGACCCCCCCGCGTACCTN
Sequence 2244
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GCCG
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Sequence 2247
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AAAAAAAAGTGCGGCCGGCCGCACTTTTTTTTTTTTTTTTTTTTTTTGCTCAATANAAGTNTGG

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Sequence 2248
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CCG
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Sequence 2250
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Sequence 2251
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Sequence 2252
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Sequence 2253
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Sequence 2254
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Sequence 2257
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Sequence 2258
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TACCTGCCCG
Sequence 2259
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GTGTAAATGGCCTTCTGAGCATGCTCTTCTAGGCTGACTCC
Sequence 2260
CCCCGCGGTGGCGGCCGCCCGGGCAGGTACAATTAGTTATCAATTCATGGGCTATGGCCA
CTGGTTTGCTGGATGGTCAGGGACTTGGAAGGAACATGACTGGAAAATTGGTGACAAAAC
GGTCTGTGGAAGAGGTATATACACAGATCTTTCTGAATGGGTGAAAAATGTGAGGATATT
TGTGTCTCATATGAATGCCCCCAAAGAATGACTTCAGCAGAAGAGGATTTTAATAACCAA
GTAGATAGGATGACCTGTTCAGCCCCTTTCTCCAACCATGCAGGTAACTGCCCAATGAGC

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TCATGAATAAAGTGGCCATGGTGGCAGGGGTTGTTCGGACGCCGTGGTT
Sequence 2261
TGGCGAATTGGACTCCCCGCTGTGGCGGGGNGNCGGNCGNCNGAGTAAGACTTCGTCTCA
AAAAAAACAAAAACAAAAACAAAAACAAAGAAGTTAGCCTGGTTGGGCATGGTGGCTCAT
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AAAAAAAAAGTTGCCGNGCCCGCTTCTTANTAAACTAAGTTGGATTCCCCCCCGGGGCCT
GGCAGGGGAAAATTTCGAATATTCAAAGGCTTTATTCTGAATACCCCGTTCNGACCCTTC
GNAGGGGGGGGG
Sequence 2262
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GCTAGCAAAAAGGTGNGTCCTTTGCCATGTAAATAAAAGCCNTNTCNNGGTAATNAAAAN
GGTNTNTNTTTTTAACTT
Sequence 2263
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GGTAAAGAGATCTAGCTTGGTCATGACACCCTTGTGTTATACGGTGACAGGCAAATCATT
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CGCGTG
Sequence 2264
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TAATAATAAAGGTTGAGTTTTCCAAAAAAAAAAAAAAAAAAAAAAAAAGTGCGGCCACCTGCC
CGGGCGGCCGGCCGCCCGGGCAGGTNTCGGGCCCGAGAAGACCTCCTTTTTC
Sequence 2265
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CNTAACCCTGCACACCTTACTCCTGGTNTCAGAGAGCCCAGTNTGAACATAAACTGNGTA
GAGGTGTTAGACTCANCCTACCCTAGTAANGCCCAACCTCCGAGACCAACCTTAAACATC
AGTAGACTGCGAGCTGTATGTGGATAGGAGCAGTTTNGNCAACCCCTGCNAAGTGACTCT
GAAAAAGAC
Sequence 2266
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Sequence 2267
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Sequence 2268
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Sequence 2269
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TTTTATACTTTGGTTTAAACAGGGGAGAGGGGGAGTNTAGTTGAAACAATNTTACAGAAG
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AGAGGCTTTAAGTNTATCCTAAGGNGATGGACCCCGGGCTTTGGGC
Sequence 2270
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TTTTTCTTACGGCAACTCAAAGCAAAGAGCTGGAGGAGCCAGNCATTATAATTGCTTACT
CTCATCGCTTAGCGCCCCAGGTGGGATGTGTTTCCAAAACACATTTTTGTNTTTATAAGG
AAATGTAGTTAGGATTAATTTTATTGTCCTAATTAGAACTCACATTTTGGTTAAATCCTC
AATTTCATTAAAAAAAAAAAAAAAAAAAAANGGN
Sequence 2271
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AGCACCTGGGAGATCAGTGCAGAGATATGTCACAATGTCCCCAGTAGGCAGAGACCAGGC
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AGGCCGAGCCTACACAAGTGTTACATCACTAAGGTGATCAACGCATAGATATGTCAAAAT
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GCAGAGGTCTGTCACAATGCCCCTTTAGGCAAGAGCTTAAACACCTCGGC
Sequence 2272
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NGGNATAATGGGGAAAGCCAATCTTTTGCCAACAAACTTTTTTTAACCAATGTTACCCTT
GCCCGGGGCCGGGTCCGCTTCTAAGAAACCTAGGTGGGGGATCCCCCCCGGGGGCCTGGC
GAGGGGAAATTTTTCGAATTATTCNAAAGCTTTAATTCTGAATACCCGTCCGGACCCTANG
AGGGGG
Sequence 2273
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AAAAAAAAAAAAAAAAAAAGGGGNGGCCGGCCGCCCGGGCGGGTCCCNTCANANANAAGG
GGGNGGGNGCTAATCCAGTACCAAACNTTC
Sequence 2274
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GAGGGGAAACAAAGGGAAAAGGGTCTATTAAACAGAGGCCTAGAGAAGCTAAAATTTGGA
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TCGAGACCAGCCTGGCCAACATGGCAAAACACCT
Sequence 2275
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TCCGAAAAATGGGAGACAATTTCACATGGACTTTGGAAAATATTTTTTTTCCTTTGCATTC
ATCTCTCAAACTTAGTTTTTATCTTTGACCAACCGAACATGACCAAAAACCAAAAGTGCA
TTCAACCTTACCAAAAAAAAAAAAAAAAAAAAGACCTGCCCG
Sequence 2276
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AGGGATGAACCACCATGCCCAGGTAATTTTTTTAATTTTTTAGTAAAGGTCGGGTCTCACTA
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TTAACCCAATATATTAAAATATTTCCACTTTAAAAAGAGACCTCGGCCGCTCTAGAACTA
GTGGGATCCCCCGGGCTGCAGGGAATTCGATATCAAAGCT
Sequence 2277
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AAAAAAAAAAAAAAAAAAAANGT
Sequence 2278
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CTTGGTAAAATCTGTAAGAAAGTTCCATAAATTATTGGGGGGGAAGGNATTTCCTCTGAA
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TGGGGCCGTAAAATCAATGGGTCATAAGGCTGGTNTTCCCTGGTGGNNGAAAAATTTGGT
TAATCCCGCTTCAACAAATTTCCCACCACCAACCANTACCGAAGCCCGGGGAAGCCATAA
AAAGGTGGTNAAAAGCCCTGGG
Sequence 2279
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GGCTGATATATGTTTGGGGGTCCCACCTCCCCGCCTCATCCGTACCTCGGCCGACCAGTG
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GTAAT
Sequence 2280
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Sequence 2281
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CCCGCAAGACAAAACAACTGGTTCTTGCCAGCCTCTAGAGAAATCCCAGAACACTCAGCC
CTGACACGTTAATAC
Sequence 2282
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CCGGGCAGGTACTATGACTAGACACATGATGCATGGCTAAAAAGCTCTTCTGGATAACTC
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Sequence 2283
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TTAAAATAATTGTTTTAGAGATGTGGCCTTGTTAGTTGGCCA
Sequence 2284
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TGGGTCGAANACCTGCCCG
Sequence 2285
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AAAAAAGT
Sequence 2286
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GACGCGTGGGTCGAAGACCT
Sequence 2287
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GGGTCGAAGCTTGTACACCT
Sequence 2288
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GACANTTNGATACATAATAAAAAATTATGACAATGTCCTGGAAAAAAAAAAAAAAAAANAGT
GCGGCCGACCT
Sequence 2289
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GCAGTATTAGACAATTCTAACTGAAGTAGGTTGCAGAGGCTAGAAGAAACCTGATTAATA
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Sequence 2290
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AGATTAATGATTTTTCAATCATTAGGGTACCTGCCCG
Sequence 2291
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CT
Sequence 2292
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CTAGACATGGAGCATACATAAACGGGCAAGATTCAGTCCCTGACCGCAAGGCACTTACAG
TCTAGTTGGGAAGGGAGACACAAATGTACCT
Sequence 2293
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Sequence 2294
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Sequence 2295
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Sequence 2297
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Sequence 2298
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TAAAGAAAGAATGGTCCGGCTAAGTGCTANAGTTTNTTTCNNTTTTTTTTTA

Sequence 2299
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TGCCCGGGCG

Sequence 2300
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GGTGGGATCCCCCGGGCCTGCAGGGAATTCGATATCAAGCTTAATCGATACCCGTCGACC
CTCGANGGGGGGGGCCCGGGTACCCAGCTTTTT

Sequence 2301
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AGAGGTTGCAGTTAGCCAAGATCATGCCACTGCACTCCAGCCTANGCAACAGAATGAGAC
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ACAAAAGGGCCACTGGCCCCTTCC

Sequence 2302
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CNNCCCNATAAGAAAAAGACTGAAATAACAACAACNACTTTAANAAAT

Sequence 2303
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCNNTNTNTTTTTTTTTTTNTTNGCCAG
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GTNACAANAAANGAGGCAATNAAGGGAAAAANGCANATNCTAAACGGACNCNTGGGTTNA
ANCTTGACCT

Sequence 2304
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CCGAGAAGAGTTTGCAAATGCAACAAAATATTTAATTACCGGTTGTTAAAACTGGTTTAG

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CACAATTTATATTTTCCCTCTCTTGCCTTTCTTATTTGCAATAAAAGGTATTGAGCCATT
TTTTAAATGACATTTTTGATAAATTATGTTTGTACCTGCCCG
Sequence 2305
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TCCTACTTGGGAGGTTGAGACAGGAGGATCACTTGAGGCTAGGAGTTGGAGGCTGCAGTG
TACCTGCCCG
Sequence 2306
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Sequence 2307
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GCACTTNTTTTTTTTTTTTTTTTTTTAAAANANANATGAGGTTTTGNTATGTTGCCCAGGCT
G
Sequence 2308
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ATTAAGAAAAGTTGGTTAAAAAAAAAAAAAAAAAAAAAAGT
Sequence 2309
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Sequence 2310
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Sequence 2311
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Sequence 2313
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Sequence 2314
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Sequence 2321
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Sequence 2322
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Sequence 2323
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Sequence 2324
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Sequence 2326
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TTGTACCTGCCCG

Sequence 2327
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Sequence 2328
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Sequence 2329
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Sequence 2331
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Sequence 2337
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Sequence 2338
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Sequence 2345
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Sequence 2347
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Sequence 2349
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Sequence 2352
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Sequence 2353
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TTTTT
Sequence 2354
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Sequence 2355
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Sequence 2356
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Sequence 2358
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Sequence 2359
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TCCCAACTCTTCCGCTAGGCCCATCATGCTCAGGCTGCCCAAGGCTTTTCTGTCACCTCT
TTTGTTCTCTCACACTGACCAGTCTTACCTGCCCGGGCGGCCGGCCGCCCGGGCAGGTAC
CAAGTGAATTTAAATAATTGGTGTGGATTGGCCAGTAGCTAAGTGGGCTTTTAAAGAGTA
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CAAAACTGTTTTTTTCCTNTCCCCTACCTTGTCC
Sequence 2360
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CAAGTTGGTCAGAGCCGCGTCTGCATCGAGGCGTAGCTGANCGGCAGGATGGGGGGGCTGC
CTGCCCAGGGTCTCTCACCGTGGTGTAAGCAGAGCCATGGCTNGCCTAGGACCCTATAGA
TACCATCACTCTTTCTCAGCTCGACTGGAGTTTGCACCTTTGCAGGGGCAAAGTAACTCC
CTGCACCCTGAACCACCCCCCATTCCTGTTCATTTCAGCAGATAATGATGGAGGGGGGGG

Sequence 2361
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TCCGCTATCATATTTCAAATCCTAATGGGAGACAAAACAAAAGTGATGGTCAGTATTTCT
TTGAAATTCTACAAGGAACTTCAGGCACATGGTGCTGATGAGTTATTAAAGAGGGTGTAC
GGGAGTTTTTGTAAATCCAGAATCAGGATACAATGTCTCTTTGCTATATGACCTTGAAAA
TCTTCCGGCATCCAAGGATTCCATTGTGCATCAAGCTGGCATGTTGAAGCGAAATTGTTT
TGCCTCTGTCTTTGAAAAATACTTCCAATTCCAAGAAGAGGGCAAGGAAGGAGAGAACAG
GGCAGTTATCCATTATAGGGATGATGAGACCATGTATGTTGAGTCTAAAAAGGACAGAGT
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CATGCAGGAGTTCAAAGAAGGACGCAGAGCCAGCCACACAGCCCCACANGTCCTNTTTAG
CCACACCTGCCCCGGGGGGGCCGNTTGAGGGCCNCCCGGCAGGGNNNGTNNTAACANNGTA
ACATGTATTATGGNAACCTTTAATCTTGGGGGNCTTANACAGGCTNNTCCAANGGNTTA
ANNAAAGNTTGNTTTNAAAAAAAAAAAAAAAGGGATGGGTNTTTTTNAAAAAAAAAAAAAAAA

Sequence 2362
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ATCACCCAGTCATTCAACAGGAAGGATTCCTGCCAGCTCCCAGGGGCTTTGGTTATAGAA
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Sequence 2363
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TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT

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TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTNNAAAAAAAAANTTTNAANGGGGG
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GNCCCCCCCCCCGNGANAAAAAAAA
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Sequence 2364
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Sequence 2365
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TNCACCNA
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Sequence 2366
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TGCCCGGGCGGCCGGCCGCCCGGGCAGGTACCCTAATAAAGGCAGCAAAATGCATTAATC
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TCAAGTAGTTTCCTCATGACATCTAATGGTAAGCAAAAATTAGTATGCATATTTCAACAT
CCCAGTNACCAATCTTTTTAAAATGGA
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Sequence 2367
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GGCAGAANTAAAAAAAAAAAAAAAAAAAAAAGT
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Sequence 2368
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CGCCCGGCAGGTACACAGTTCTGACTGCAATACCTTTTTCAGACTGCAAAGGGAGCTCAG
GATCCAGAAGTCATTAAAAGAACGGACGCGTGGGTCGAAGCTTGTACCT
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Sequence 2369
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ACTGTAATGTGATAAATTATTAAATTGTTGCAAAGTGCAAAAAAAAAAAAAAAAAAAAAGA
CCTGCCGCGGC
```
Sequence 2370
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TAGTCCATTTTGGAAAGTAAAGCCCAAGAAAGCAAAAGATGAAGGTTCTAAAGCTAGTTTT
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GACTGACCTCAGAGTCCTCGGCCGCTCTAG
Sequence 2371
TTCGTGATAACTTCTCCTAAGTGCCAGGCATTGTATTACATGCTGNGAGCACANAGATGA
ATAATANCAATAGGTTCACANAAAAGATGAATTGATTGAGAGAAAAAGA
Sequence 2372
CGAGGTACCCAAAAGATATCACTGTGAAGGTTTGGATACACTGACTGAGGAAAAAAGAAG
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Sequence 2373
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CCCG
Sequence 2374
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Sequence 2375
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Sequence 2376
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GGGNGCCCCCCCCCCCCNTTTTTTTTTTTTTTTTTTTTTNNGGGGGGGGANNAAACTCNNCNCG
GGGGATAAANANANGGATAATNTTTTTTTTNNTTNGGAAATNTTTTTTTTTTN
Sequence 2377
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AAGTTGTTCCATTTGGGGGGGTCCCATAAGGGGGCCTCATGTTTCCCTAGGTGTTACCCCTT
CAGACACAGCACATGCCTACAAAGNGGACNCGTGGGGTCGAAGCACCTGCCCG
Sequence 2378
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Sequence 2379
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Sequence 2380
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CCAAAGGGTGGGGAA
Sequence 2381
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TTTGGGGAAAAAAAA
Sequence 2382
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C
Sequence 2383
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Sequence 2384
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ATATCTTTTGGGTACCTCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTGCAGG
Sequence 2385
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CAGTTTTCTGAGTTAGCTATTATTTCCACCATAAAATTGGGGGTAAGATTTGGCAAAAAA
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Sequence 2386
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Sequence 2387
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AAGTGCGGGCCGACCT
Sequence 2388
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CCTGCCCGGG
Sequence 2389
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TCATATAGCTTTGGGATTTTTGA
Sequence 2391
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Sequence 2392
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Sequence 2393
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AAAAAAAAAAAAAAGTGCGGNCCGNTCTANNAACTAGTGGGAT
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CTTGAGTTGTAAAAAAAAAAAAAAAAAGT
Sequence 2395
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Sequence 2396
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Sequence 2397
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GCGACCTACGAGGGGGGGG
Sequence 2398
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AAAAAAAAAAACCANNTAATGNGAGCCNTTAGTCACTGCT
Sequence 2399
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Sequence 2400
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AGTCTTTCTGGCTGGTTTGAGCGGACGCGTGGGTCGACACCTGCCCG
Sequence 2401
AGGTACTTCAAAGTTATTTGCACATACACTTGTTTACTTTGNATGTTTTGCAGGATTAAA
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TAAAACC
Sequence 2402

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GCGTCCGCGTTNATGATTTTTAAAACACACTTGAAATAAAAATGATTGAACTAAATTTTG
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Sequence 2403
CCGGGCAGGTACATCTCTATCAGAGCTTTTGGGTGACCAGGCACACTGTCAATGAGCAGT
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AATACTCAGTAAACCATGCTGTTAACAGATAAGCTGNCATCCAGACTTTGNTGTTCCATT
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AANTGAGCACTGGCTTCAA
Sequence 2404
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CAAAACANGNANGNAAGNNNNCACGNGCTTTTTTTTAAAAANATTTTTTTTNNNNGGGGGGGG
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Sequence 2405
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Sequence 2406
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CCAACT
Sequence 2407
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CCTNTGAGGGGGGGGCCCGGCACCCA
Sequence 2408
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Sequence 2409
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Sequence 2410
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CTAAAGAATTNGGACATAANAAGAGTGAAATTGACAAGGAAAGGAGGAGGGGGA
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Sequence 2412
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Sequence 2413
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Sequence 2416
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Sequence 2427

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Sequence 2428
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Sequence 2449
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Sequence 2456
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Sequence 2459
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AAACAACCACCAAAAAAAATCAATTGGCTAAAAAAAAAAAAAAAAAAAAAAAAGTGGGCCGC
TCACCT
Sequence 2460
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CACGCGTCCGGACAGCTCGTGTCCACAGGGGTCATGGGGTCTCTTGCTGCTAGGATTCTG
GAGTTTCATGGTAAGAGCGGGCCACTCCCCACCTATTCAACTCACCCCTTCCCCAGGAGT
TAATGGGGGCTAGTAAGGAATGCTAGTGCTTGGAAGCCCTGTGCAGGCTTCTGAGATTCC
TGCCCCCTCAGCCCATGCTCTGCATCCTCCCTTCATCCACCCTCAATGTTTTCCTTCAAA
AGATCTGCTCAGAGTGTGCCAGTCTTCCCAAATTCCTGGTCTCTCCATGAGAGATGTTCT
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Sequence 2461
AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTTTTTTTT
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Sequence 2462
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CCCAGTAGAAACAAAGT
Sequence 2463
ACGACTNCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTAAAGTTA
TTTTAGTCATGAAATTTTATATGCAGAGAGAAAAAGTTACCGAGACAGAAAACAAATCTA
AGTCGA
Sequence 2464
CTACTTAGGGCGAATTGGAGCTCCCCGCGGNGGCGGCCGAGGTTTCAAGACCAGCCTGGC
CAACATGGTGAAACCCCATCTCTACTAAAAATATAAAAATCAGCCGGGCATGGTGGCATG
TGCCTGTAATCCCAGCTACTCAGGAGTCTGAGGAGGAGAATCACTTGAACCTGGAGGCAG
AGGTTGCAGTGAGTCGAGGTTGCGCTACTGCACTCCAGCCTGGACAACAGAGGGAGACTC

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TGTCTCAAAAAAAAAAAAAACCTACAGCTGTTCAAGGACCAGCTGACAGGTCAAGTGTGGC
CTTTTCTGGTCTTTGAACACATCATAGAAAGTGNCAAATGCTGCAAAGCCATNAAGAACA
TGAACTATAAACGGGT
Sequence 2465
CCGCGGTGGCGGCCGAGGTACAAGATAGGTATGGATTCCAGNCTGGAGAAACCCNTAAAC
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ACGCGTGGGTCGAAGACCTGCCCGNN
Sequence 2466
CCGCGGTGGCGGCCGAGGTCTGATTACAAAAATTTAAAAAATATGCAACTTCAGGCATAA
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Sequence 2467
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GTTGGTTGATTGTAGCGGACGCGTGGGTNGAAGCTTGACCTNGGCCGCTCTAGAACTAGT

Sequence 2468
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TAAATGTGTACCT
Sequence 2469
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Sequence 2470
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CCCCNTTTTNTTTTTTTTNTANAAANNANGGGGGGGGGGGNGGG
Sequence 2471
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AAAAAAAAAAAAAA
Sequence 2472
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CNNGAGCATGCATGGAACACATATACCAAACATCTTTCTGATAACATTAAACATTTTTAA
AAGATGTTAAATGTTCTTTTCATTGTGGTGCTTCAGATTCCTGATTCTAGAACTTGTGTG
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Sequence 2473
CCGCGGTGGCGGCCGCACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGGGGTTTCTCTTT
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CCTCTCANAATATTTAATGGTACCTGCCCG

Sequence 2474
CCGCGGTGGCGGCCGAGGTCAAGCTTCGACCCACGCGTCCGATCCTCTTCTGCTGTTCTG
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AGGAAGAGGAAGAAGAGAAGGAAGAGGAAAAGGACAAGGGAGATGAGGAGGAGGAAGGAG
AAGAGAAACTTGAAGAGAATCATGCTGTTGCATTTAGAACTTTCTGCTTTGCACAGGAAA
GAGTCACACAATTAATCAACATGTATATTTTCTCTATACATAGAGCTCTATTTCTCTACG
GTTTTATAAAAGCCTTGGGTTCCAACCAGGCAGTAGATGTGCTTCTGAACCGCANGGAGC
AAACACTGAAATAAAATAGTTTAT

Sequence 2475
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TCCACCCACCTCAGCCTCCCAAAATGCTGGGATTACAGCGTGAGCCACCANGCCCGGCCA
ATTTTTGTAACTTTTACAAAGATATTTAATTTAAAATTGATTTTAATAAAAGGTAGACAT
CCAAAAACACAGGATGATGAATGCACTTCAATGTTAGGGGAATATC

Sequence 2476
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CGATTCTGCATCAAGCATTATTCAATCGGACGCGTGGGTCGAAGCTTGTAAACCTGCCCG
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CAAGTGATTCTCCTGCCTCAGCCTCCTGAGTAGCTGGGATTACAG

Sequence 2477
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GAGGCTGAGGCAGGAGAATCGCTTGAATCCAGGAGGNGGAGGTTGCAGTAAGCCGAGAAC
CTACTGCACTCTGGCCTGGGCGACAGAGCAAGACTGTCTTGGGAAAAAAAAAAAAAAAAA
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Sequence 2478
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AAAAAAGGAGCAAAAACTCTTAATGACTGGTNACATGCACATTTGGTGTAGGAAATTATT
ATGNGGTAAAATTTATATATTTCTATTTATTTTTATTAATTTATTNTTNACACATTATTT
CAC

Sequence 2479
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Sequence 2480
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TTTGACCTTGGAGCTTTGTACCTGCCCG

Sequence 2481
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TAATCCAATTTTTTGGGC

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Sequence 2482
AGGNCGACNTTNTCACAGGCAGNNAAACCGGCCAGNTNAAAACACTATGCTANCTCGCGG
GGCCANTNTTAGGATGGGTGAGGCAGATGAANCCATTCTCCNANTGGCCAAGGCCGAGGG
CATCAGCCTCAAAGAACNTTTGACNGGAGAGAATCACANACGTGNNNTATTCGTCATAAA
NAAANAATGAAAAACCNACC

Sequence 2483
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CAAAAGTGCATTCAACCTTACCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAGTGCGGCCGGCC
GCCCGGGCAGGTACCAGTAGCAACATATGAGTATTTCTCTAGATAACTTTTTTTTGACAA
GGTCTCACTCTGTTGCCCAGGCTGGAGTGCAATGGTGCAATCTTGGCTCACTGCAGCCTT
GACCTTCCCTAGCTCAGCTGAACCTCCCATCTCAGGACACCATTGCCTCCACTGCCCATC
CTGCATCTGCCTGCCTACCCCAAAAGT

Sequence 2484
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TTGCCACCAGTAACATACTTGGTGCCACATGACTAGGATATGTTCTCTAGTGCTAACATG
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Sequence 2485
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Sequence 2486
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Sequence 2487
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Sequence 2488
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CAAAAATATAAAGAAATGACTGAAAGTTGTTGACAGGGTTTTTAAGAAATAANTTATTCT
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Sequence 2489
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GCTGTANCAGNATTTGTATACTCCAGAATAAGNTTCTGTGATTCTTANCTGCCAATGTGT
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TCGCCCTTATAAGTGAAGTCCGNAAATTACGCGCCGCCTCANTTGGNNCGGTNAGTTTTT
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Sequence 2490
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Sequence 2491
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CCTCCTGCCTCCTGCGGCTGTTGGATTTGGGAATGACCTTTGGTGAGAGNCTCACTGCTC
CAGGGTCTATTTTTTGGTCCAAAGGCTAGAACCTATANAAGTNGGGAATCACCTNTTTTT
TCTTTTTCNNGGGGTGAAAATAAAATGGGTTTTTTTTCAANTTCNAACAAAAANAAAAAA
Sequence 2492
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Sequence 2493
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CCACTTAGGCACAAGAAGGCTCATGAGGATATC
Sequence 2494
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Sequence 2496
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Sequence 2497
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Sequence 2498
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'AGATGGCTGTCTATNAACCAGCAAGTTNGCCTTTGNCANACCCCAGATCTGCANACTACC
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AGGCATNGCTACNATNAAGTCTTTCCNTGCTCAGAATCTCC
Sequence 2499
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTGGGAANTGGATGACTT
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ATGCCAATGCTTCAGTGGCTGGGAAGGTGATCGATGCCAGTGCCCTTCAGCAGCNGCCCA
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Sequence 2500
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Sequence 2501
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Sequence 2502
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ACACGGTGACTATCTTACCCTGCTCCC
Sequence 2504
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Sequence 2505
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AACCATTGTTATTTCCACTTTTAAGTCCTCAAGAGATGAGAAAAGGGAGGTAAGGCTTCC
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ATACAATTAACCTANAT
Sequence 2506
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CTGGAGTGCAAAAATAAAATCCACTNAAGAGTCACAAGGCCCGCTGTGCATAATNGGNTT
CACTTTTACCTTTTTTT
Sequence 2507
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CCTTCAGATCTGTGTCTTTCCTGCATGCAAATTACNCCACAGAGCAAGCACCTATGGCAN
CGTGGATCACAGGCTCTGTTTTANGATAGANAAAGGACACAAGGNGTCCCCC
Sequence 2508
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CCCAAAACCAAAAAAAAAAAAAAAAATAAGGTACCT
Sequence 2509
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GGGCTTTATTTGTG
Sequence 2510
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TGTTCCATAGCAGGAATCTCAGATAAGACTTTGTAAAACCCGTAAAACTCANCCGAGCCA
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AAGATAAACCTGGGGCGTCTGCACTTGNCAAAAAGTGATATTCTTTACTTACACAG
Sequence 2511
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TNGTNGAGAGAGTANAAAATTTAACACCCATANTNNGCCTAAAAGCAGCCACCAATTAAG
AAAGCGTTCANGCTNAACACCCACTACCTAAAANATCCCAAAAAAAANAAAANAAAGNAC
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GATAAAGACACTTTTTCAAAA

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Sequence 2512
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AGACTGACGCTGCCTGATCGCCTCAGAAGCCCCGCAGACCATCATGGACGCCGAGCTTTA
GGTAACTCACAGTGGAGGCCCGCCTGCACCCAGGTGAAATAAACAGCCTTGTTGCTCACA
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AAGGCCTCTGAGGTAGGTACCT
Sequence 2513
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Sequence 2514
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Sequence 2516
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Sequence 2517
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Sequence 2518
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Sequence 2519
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Sequence 2520
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AAGATCAACATGGTACCTGCCCG
Sequence 2524
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Sequence 2529
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Sequence 2539
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Sequence 2541
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Sequence 2542
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Sequence 2545
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Sequence 2546
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NCTGCTGCCATCCATGTAANATGTGACTGGC
Sequence 2547
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Sequence 2548
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CCATTTGGTCTTTTTTTTTTTCTTCCATTCNCTGGCCATAAGATATCCAAGGGGGGNGGGC
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GCCCCC
Sequence 2549
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GGATGTATTTTTATCCAAAATGATGCATACTTGGATGCATTAAAAGCACACCAACAAAAA
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AAAAAA
Sequence 2550
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GCAGGGCATGAGGACAGCAATGGTTGTATCAACTATGAAGCGTTTGTGAGGCATNTCCTG
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CCNGTTTTCCCCAAANGCCCGNCCCCTTTTCCNTTGGGANAANTTTTTNTTTCTNCCNCA
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NNNNCNTNNNNNNNAAAANCCCCCCCCCCCCCCCTATNAAAANTNAGGGCCCCCCCCGGGNNN
GNAAAAAATAANANTAAATTTTTTTNCCCCCCCCNCNCCNGGGGGGGGGNGGCCCCCCCCCNCT
TTTTTTTTTTTTTNTAANNNANCCCCCCCCCCCC

Sequence 2551

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ANAANGGGCCCCCCCCNGGGGGGNGNANNNNNTTNNAATTTTTTTTTTNCCCCCCCCCCCCNGG
GGG

Sequence 2552

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TGGGTATTGAAACTCTAGGAGGTGTTTTTNCCAACCTTNTTATTGGGATTNTTNTTTTCC
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Sequence 2553

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CCGAGCAGCTGGGACTACAGGCTCCCATCACCACGCTCGGCTAAGTTTTTGTAATTTTAG
TAGAGACAGGGTTTCACCATGTTAGCCAGGATGGTCTCGATCTCCTGACCTCGNGATCTG
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AAGTATTCTTCAATAACATTCCCTT

Sequence 2554

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AACACCTCAAGTGATAAAGTGGCCACATTGNAAAGGGAGTTTTTATCTTTTTATTGNNGG
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A

Sequence 2555

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CTTACTACTTTGACCGCGATGATGTGGCTTTGAAGAACTTTGCCAAATACTTTCTTCACC
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Sequence 2556

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TTTTTTTTTTTTTTTTTTTTTTNAGACAGGGTCTCCCTNTGTCACCCAGGCTGGAGTGCAGT
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Sequence 2557
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TTCGGTCGCCCCGCGTACCTGCC
Sequence 2558
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Sequence 2559
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Sequence 2560
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CCCCCNGGG
Sequence 2561
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- NAANANTCCGNGCCTTTTTTTTTTCNCTTGNGNCAAACCNCCANTGNGCTTTNGACNNCCAC
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TTTTT
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TTCAATCCCGGCTCTGGGGNANTANTNAGNAAAAGGTNCCTTCCAAAGGAANNGGGGCAA
NAATTGGGNGGTNNTTNGGNGTTTTTCAACCCNNANAAAAGGGGGCCGGGGGGGTTTTTT
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Sequence 2563
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Sequence 2564
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Sequence 2565
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TTTTNNNTCNGGGGNAAAAAAAAAAAAA
Sequence 2566
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CCCCNNGGGNAAAAAAAAAAAA
Sequence 2567
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·GGTCTTNGNNCTTNTGCCTAGGACNTNCTTTCCTAGGTANCCACATGCCTGCTCTCATTA
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CTTNTGACTTCT

Sequence 2568
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CTGCTCGTGTTGAATCTAGAACCGTANCCAGACATGGNACTGGAGGACGAGCAAAAGATG
CTTACCNAATCCGGAGATCCTGANGAGGANGAAGAGGAAGAGGAGGAATTAGTGGATCCC
CTAACAACAGNGAGAAAGCAATGCNAGCAGTTGNAGAAATGTGNAAAGGCCCGGNAGCGG
TTAGAGCTCTGTGATGAGCGTGTNTCCTCTCGATCACATACAG

Sequence 2569
CCGCGGTGGCGGCCGAGGTACATTATGTTTTCGTTTTCATTCATCTCAATAGTTTCTTCT
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TATACCAGGAAAGCCAAGAGAATCCACAGACCCTCTGAAGGAAGCAGATTGCTCCTTCAG
GACCCAAGAGACACCCTAAATACTGTGTTGGTATCGTTGGCAGAGAAACCTCAAGACGGT
TCACATTACAGGACTCTGTGCAGACAACCCTCGGTACCTGCCC

Sequence 2570
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GGCTNTTTTAAGGAACCGCCCGCCCAAGGCTCACTCCTTTATCTTTCCTATCCTTTCAGG
CTATTGAGGGCACCTACATTGACAAGAAATGCCCCTTCACTGGTAATGTGTCCATTCGAG
GGCGGATCCTCTCTGGTAAGTGCGGGAGTTACTGGTGTNTGGGGCCTGAAATACTGAAAG
AAGGGTCTTGGGGCCCA

Sequence 2571
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GCCCTCACCGNGTCANAGACGGAGTNTGTNATNCGNCTGCACCAANCACACNTTCNNCAA
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Sequence 2572
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TTGAAATAGTGAATAGGAATNCAATGCATTTCCTCAGTGATCACTGATTANGAATGAGTT
GGTNNGGATCCTTGGGA

Sequence 2573
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CTCTGCAGTTGTGTAAACACCATTGGGCAGCTGGCGATTATCTGCTTCCAAGAACTCCTG
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Sequence 2574
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CGACTCCCCCTACTCCTGCTCCTGCCTTGGCTCCTCCGCCNAACGTNTCGCACTCCGAGA
GCCGNAGNGGCAGCGGNNCCGTCCTGCCTGCAAAGAG
Sequence 2575
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GAACGCTTTGGAGAGCGTTGTCAAGAACATAGCAAAGAAAGTCCAGCTCGTAGCACACCC
CACAGAACCCCCATTATTACTCCAAATACAAAGGCCATCCAAGAAAGATTATTCAAGCAA
GACACATCTTCATCTACTACCCATTTAGCACAACAGCTCAAGCAGGAACGTCAAAAAGAA
CTAGCATGTCTTCGTGGCCGATTTGACAAGGGCAATATATGGAGTGCAGAAAAAGGCGGA
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AAAAAACACCAA
Sequence 2576
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Sequence 2577
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G
Sequence 2578
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Sequence 2579
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GAATTTCGATATCAAGCCTTATCGGATACCGTCCGACCTTCGGAGGG
Sequence 2580
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TTACACTGCAGTGGATGGCAGGTTTT
Sequence 2581

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GGGAAATGAAGGCTTCCATTGGG
Sequence 2582

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GNGNGCCNCCACCCCGNTNGGCTTATTTTT
Sequence 2583

AGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGCCAGGTACGCGGGGGGCACTCAG
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CTACNAAAAAAGAAANNGAAAAAAGAANACAGGATATCTGAAATTAAGACNGCNGATGGA
GNNGTTTCTNNAAATGACAGGGNCCAAGGNGNGACCACGGGACCAAGNGGCTGAACTGGN
ATGAAGTTAAGAAGCAGNAANAAACATCCNATAATATGGTGATCAGNTCAACAGAATGAC
ATATTNACCATGTNCCCNAGGAGGNGATGACTGAGATTTCAAATT
Sequence 2584

TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACGCTGGATAGCCTCCAGGCC
AGAAAGAGAGAGTAAGCGCGAGCACAGCTAAGGCCACGGAGCGAGACATCTNGGCCCGAA
TGCTGTCAGCTTCAGGAATGCCCCCCCCGCGTACTTTTTTT
Sequence 2585

CGGCTGCGGCGAGCCGGTATCAGCCTNACTCAAAGGGCGGGTAATACCGGGTTATCCACA
AGAATCAGGGGAATAACCGCAAGGAAAAGAAACATGTGGAGCCNAAAAGGCCAGCAAAAG
GCCAGGGAAACCCGTTNAAAAAGGCCCGCGGTTGCTTGGGCGTTTTTTCCAATAGGGCTT
NCGNCCCCC
Sequence 2586

TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACGCGGGGGGATT
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CTGCTCGTGTTGGATCTAGAACCGTAGCCAGACATGGGACTGGAGGACGAGCAAAAGATG
CTTACCGAATCCCGGAGATCCTGAGGAGGAGGAAGAGGAAGAGGAGGAATTAGTGGATCC
CCTAACAACAGTGAGAGAGCAATGCGAGCAGTTGGAGAAATGTGTAA
Sequence 2587

CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTT
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TTGAATCTACATTTTGGCAGAAGTTAAACATTCCCACATAATGTCAAAATTATACATCAT
GCAGTTCTGTTTTTTTTGTTTGTTTTATTTTGTTTTGTTTTTGAGTCTGGCTCTGTCACCC

TABLE 1
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AGGCTGGAGTGCAGTGGCGTGATCTGCAACCTCTGCCCCCCGGGTTCAAGCGATTCTCCT
GCCTNAGCCTCCCGAGTAGCTGAGATTACAGGTGCGCGCCACCACACTTGGCTAATTTTT
GTATTATTAGTAGAGACGGGGTTTCGGCATGTTGGCTAGGCCGGTCTCTCCTGACCTCAG
GGGGATCAGCCC
Sequence 2588
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CCTGNGATTATGGGAGAGTCTGGCTTCAATCAAGGGCTGAAATTCCATTTCCACTGACAT
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GCCGTTGGGACTTTGATACCCAGNAAGAATACAGCGAGTATATGAACAACAAAGAAGCTT
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Sequence 2589
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TCAGGGAAATCCAAACAGCGATTTACACCCGATTAACACCCCCTTTATATATTTTTTACA
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AA
Sequence 2590
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CAAATAGCTGGGATCACTGGCACAAACCACCATGCCCAGCTAATTTTGTATTTTTTGTAG
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TTCTGCGGCAAAAACTTCTTCAAAAAATAAATGTAC
Sequence 2591
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CTCCACCTCCAAGTCAAAAGAAGTCATGTTCAGGTAAAACTCGTTCTCGCAAACCTCTGC
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ATGGGAAAATCCA
Sequence 2592
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CAAAGCCTGTTTGGTTATCTCTTCACACAGACATGCGTGACACTTGGTGCTGAAGACCCG
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CCACCTACAACCTCGGGTCCTCAGTCCAACCAGCCTAAGGAACATNTNACCAATTTCAAA
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Sequence 2593

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CCGGGCANGGTACCATATGTTTCAAAGTAGCTGTTCATCCACAGATAAAGAGATCAAGAA
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GAAGTGCAGTCTCCCCCGCGTACCTN
Sequence 2594
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TCTCATCATCCTTCAGTTGTCTGAGGAGACAGAGGATCACATGTGTCACAGTGAGTGCTG
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CATATTCATGTGACCCACTGTGAAGTGACAGGCAGCTGCCAATTCTGTCATATAAGAAGC
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Sequence 2595
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CCTCCACCTCCTGGGTTCAAGCAAGTCTCCTGCCTCAGCCTCCTGAGTATCTGGGATTAC
AGGCACATGCCACCACGCCCGGCTAATTTTTGTATTTTTAGNGGAGACGGGGTTTCACTT
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NGCTGGGATTACAAGGCGTGAGTCACCGTGCCCGGCGAGAAGCAACTCTTAAAATACTTT
ATTCCTTCCTCTAGGACCCTTTAAATGGTGAAAATGGGCAGATGAGTAGCAATAAGTGGA
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TAAGTGGATCCCCCGGGC
Sequence 2596
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CGGCTTCTCTTTAGCATATGCAAATTGCCAGCATTACCACTCTTGGACTTTGGGGCCACT
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GAATCCGTGGCCCACTGCACTCCAANCCTGGGGTGACAAGAAGCCGAGGACTCTGGNCTC
AAAAAAAAAAAA
Sequence 2597
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Sequence 2598
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ATACCTGGCTATGGGAGAAGACCCCTTGCATGGGAGGGACCCCTTGCTATGGCCCCTTTA
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GGGGGATGAAGGNTCGGGACAGTGGCTCATAAGAGCCCGAGTATTGAGCCCTAANCTGTG

TABLE 1
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GGGCCTAANAAATGTTCCTTTAATAAAACAATCCTTATTTTTTTTAANAAAAAAAAAAAAA
TNAAAAAAAAANNAAANGTACCTTGCCCGGGCGGGCCGCTCTANAACTAAGNGGGATCCC
Sequence 2599
GGCAGGTACGCGGGTGGACACAATTTCCACAACCTTTCAGATGCTGATGTAGAGCTATTG
GGAAAGAACTTCCAAACTCAGGAAGTTTGCAGAGAGCAGACAGCTAGAGATAACTCGGGA
CCCAGAGTTGGTCGACAGATGTTAGGATGTATCCTAGCTTTTAGCTATAAACCACTCAAA
GATTCAGCCCCCAGATCCCACAGTCAGAACTGAATCTGCGTTGTTGGGGAAGCCAGCANT
GGGCCTTGGGGGAAGGAAAGCCCATGGCTGTGGTTCAAGAAGAGGGGTGGGGCCTGGGCA
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CGAATNCCATTTTAAAAGATTTTCTAGGCCCCTTCAAGGGTTTTTGTAGAAGTGTNAAGC
CCTTGGTGGGGCAAGGGNTTG
Sequence 2600
GGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGGACTTNNTTTTTTTTTTT
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TCTGAGGCCGCAGCGAGCCATGGTCACACCACCGCACCCCAGTCTGGCAACAGAGCAAGA
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Sequence 2601
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ATTGGTTTATCCCGCTTCACAAATTCCCACACAACATNACCGAAGCCCGGGGAGCCATAA
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Sequence 2602
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Sequence 2603
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CTTTTGGTTCTAAGAAGGCTGGCGGAGGGNACCCTTCGGCCCGCTTCTAAGAACTAGNTG

TABLE 1
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GGATCCCCCCCGGGCTGGCAGGGAAATTCGGATATCNAAGCCTTATCGATACCCGNCCGA
ACCCTCGANGGGGGGG
Sequence 2604
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GATTCTTTGCGGGACGGCGAGCGCATTTGTGCTTTGCCCGCCGCGGCCTAGGAGGCCTTT
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CCCTGACCCGGCCTCACCATGTTGGTGCTGTTTGAAACGTCTGTGGGTTACGCCATCTTT
AAGGTTCTAAATGAGAAGAAACTTCAAGAGGTTGATAGTTTATGGAAAGAATTTGAAACT
CCAGAGAAAGCAAACAAAATAGTAAAGCTAAAACATTTTGAGAAATTTCAGGATACAGCA
GAAGCATTAGCAGCATTCACAGCTCTGATGGAGGGCAAAATCAATAAGCAGCTGAAAAAA
GTTCTGAAGAAAATAGTAAAAGAAGCCCATAAACCGCTGGCAGTAG
Sequence 2605
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CAGTCTCCAATAAGAAACCAGNGTTTGATCTTAAAGCAAGTTTGTCTCGTCCCCTCAACT
ATGAACCACACAAAGGAAAGCTAAAACCATGGGGGCAATCTAAAGAAAATAATTATCTAA
ATCAACATGTCAACAGAATTAACTTNTACAAGAAAACTTACAAACAACCCCATCTTCGGG
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Sequence 2606
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Sequence 2607
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Sequence 2608
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CTTTGTCCAACGCAGGATAGAGAACATAGCAACAGAAAGGGTGAGGCAAAAGGCATGGCT
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TABLE 1
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AGAAAGTCTGACAGGCTTCCACTGCCTCTGAGAGAACAACAACATGTTGGCTCCATAACA
TAAAGAAAAACAATGCTGGGTGCGGTGCGGTGGCTCGTGCCTATGATCCCAGCACTTTGG
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Sequence 2609
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CCACAGGTGTGCACCCCCACTCCTGGCTAATTTTTTTTATTTTTTGTAAAGATGGGGNCTT
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ACCCCCCGGGGGAGGGGGTGGTTTTGGCCTTTTCCTTCTNGTAATANTNNTNGCCGGGGT
NG
Sequence 2610
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Sequence 2611
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Sequence 2612
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TTTTTGTTTTGGTTTTTTTGGTTGCTTTGGTT
Sequence 2613
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GTTCGG
Sequence 2614
GGAGGCGGCCGCCGGGCAGGTACTTTGTTTCTTTTTTTTTCCTTTTTTCTTTTTTTAAGACA
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CGCCCGCCACCACACCAGGCCACATCTATGTATTTAGAGACAGAGTCTTGCTCCACCTGG
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TTGAACCCAGTGCCCGTTCCTTGCAGATCTGCGAACAGTGGGCACCAGCCTCTAGTCTCA
AGTGTGAGGTTTGACTCCAGGACGNTGAATTTA
Sequence 2615
CGCGGTGGCGGCCGCCGGGCAGGTACGCGGGTGCTACACGGAGGATGAAGCTAAGGAGCT
GGCTGCGGAGGTGGAGGGTTCAAGACGGCCCCAATGAAGATGGGGAGATGTTCATGCGGC
CAGGGAACTTGTCGACTATTTCCCAAAACCATACCCCAACAGTGGAGGGCTGNTNGAGNT
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CCATAAAAAACGCNTGGGCTAAANATTGTTNATAATGATGGNTTTGGGGNNNCCCCTNTC
TANAANATAAAGGGGGACATGGGNTTTTTTCTGAAAAGGNGGGNATTTTTNTNCCCCCCAT
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Sequence 2616
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CAGCACCTAGGAATCAGGAGTTTGGGCAGAACTGGGGACTTAACAACTGTTCCTATCACC
CCACTGACAACCACGTGGACCAGTGTGATTGAACACTCAACACAAGCACAGGACACCCTT
TNTGGAACCGATGAGTCCTACTACGTGACACAAGTCACTCAAAGATCAAACATCTATCCA
GGCCTNAGCATTCCCTTTCCATCTTACTGGAAGTCTACCTGNGCTCGGGACACANGGGAG
AAGCTCTNTTGAGGCACCACTTTTTGGGAAACCATCTACAGACACACTGTCCAGAGAGGA
TTGAGACTGGCCCAACAAACATTCAATCCACTCCACCCAT
Sequence 2617
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Sequence 2618
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Sequence 2619
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Sequence 2620
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Sequence 2621
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Sequence 2624
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Sequence 2625
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Sequence 2627
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Sequence 2632
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Sequence 2639
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Sequence 2643
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CGATATCAAGGCTTATCCGATACCGTCCGACCTCGAG
Sequence 2644
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Sequence 2649

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CAGGAGCCTGAAAAGCTAATTTGAGAAGATAATAAGTTGGATTTTTGNTTTGTTTTGCAT
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Sequence 2655
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Sequence 2656
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCCCCGGGCAGGTACTTGAACAGTAGGAGG
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Sequence 2657
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AA
Sequence 2658
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Sequence 2660
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TTCTCCACCAGAAAAGATAAATGACTGAGAATGTAAGTCTGCGCTCTGATTAACACAATG
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Sequence 2661

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Sequence 2662

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Sequence 2663

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Sequence 2664

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Sequence 2665

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Sequence 2666

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Sequence 2667

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Sequence 2669
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Sequence 2672
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TGC
Sequence 2674
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Sequence 2675
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Sequence 2676
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Sequence 2678
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Sequence 2680
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GGTTTT
Sequence 2681

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AGCTGGGATTACAGACACCCACCACCACGCCCAGCTAATTTTTGTATTTTTAGTAGAGAC
GGGGTTTCACTATGTTTTGTCAGGCTGGTCTCGAACTCCCAACCTCAGGTGATCCACCAC
TTAACCT
Sequence 2682

CCTCAGATTTTGGGCCTAGGAAGGTAGGTGATTTAAACTCACTGAAAGCATGTACACCTT
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Sequence 2683

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Sequence 2684

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Sequence 2685

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GGGGCCCTTTTANAAAAAAAGGGGGGGGNTNCCCCCGGGGGGGTGGGANGGAANTTTTGGAN
NTTTAAGGCTTTTTTGGGTANCCGGGGAACCCTTTNAGGGGGGGGGGGG
Sequence 2686

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Sequence 2687
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Sequence 2688
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CAGCAAAGATTAAAAGGATGACCTGAGGCTGGCAACCACAAAACC
Sequence 2689
CACTACTTAGGGCGATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACAGAGTCT
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AACCCGGGGACAGAGGACGCAGGACAGACTANGAGGGAGCCCGGGAGGATGGGCTGCANC
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Sequence 2690
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GGGGG
Sequence 2691
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Sequence 2693
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACATAAGCCTAA

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ACAATTTCACCTANGTAAAATATTGATGTCATAACCAAACTATATGGCCCCGTTTCATAA
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TGACATTAAAAATCTAGAAACGGAATTTTA
Sequence 2694
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GATAATGAGCGTGGCCCAGAGCAGCCAGTTGACTGACT
Sequence 2695
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Sequence 2696
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ACACGCCTGTAATCCCAGCTACTCAGGAGGCAAGGCAGGGGAATTGCTTGAACCAGGGAG
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Sequence 2697
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GTGA
Sequence 2698
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Sequence 2699
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AAGGT

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Sequence 2700
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GGTGGATCCC
Sequence 2701
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GATCCCCC
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Sequence 2703
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Sequence 2707
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Sequence 2713
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Sequence 2718

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Sequence 2720
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Sequence 2721
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Sequence 2724
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Sequence 2730

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Sequence 2731
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CCAGCNCTT
Sequence 2732
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Sequence 2733
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Sequence 2734
CCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTATGAGATGGAGTCTC
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CTGGGTTCACGCCATTCTCCTGCCTCAGCTTCCCAAGTAGCTGGGACTACAGGCACCTGC
CACCACACCCGGCTAATTTTGGTTTTTGTATTTTTAGTAGAGACAGGGTTTCACTGTGTTA
GCCAGGATGGTCTCGATCTCCCGACCTNGTGATCCGCCCGCCTCAGCCTCCCAAAGTGCT
GGGATTACAAGTATGAGCCACTGAGCCCGGCCTCTCTGTAGCTTTTAAGATGTTCTTAGG
TGACTTATGAGAATGAAAAAATGGAGAATTTTCCGTCTTCCTGCCATGAAATCAATTAAT
GGCAATTGCTACTGAAAGCTGTTCTGTTTTT
Sequence 2735
ATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTTGG
GGGGTTGCTATTATTGTTATTGTTTCTAGATGAATGTGNGAAGCCAAATTATTCAGTGTC
TTAAAGACCATATTAAAAACTCCTGCCAGGCGCAGCAGCACGTGCCCATGATCCCAACTA
CTTGGGAGGCTGAGGCAGAAGGATCGCCTGAGTCCAGAAATGCTGGGCTATAGTGCACTA
AGTCAATTGGGTATCTGCACTAAGTTCGGCATAAACGTGAGGGACCACAAGGTTGCCTAA
GGAGAGGTGAACCAGACCAGCCTGGAAACAGAGCAAGTCAAAACTCCTGTCCTGATGAAG
TAGTGGGACTGCACCTGTGCATAACCACTGTACCTGCCCG
Sequence 2736

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GGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACGCGGGGACAGACGAGATCTCGAT
CGAAGGCGAGATGGCGGACGTGCTAGATCTTCACGAGGCTGGGGGCGAAGATTTCGCCAT
GGATGAGGATGGGGACNAGAGCATTCACAAACTGAAAGA
Sequence 2737
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AGAATGTGGATTTTTACCTACATTAAAGGGTTAAAAACAATTATTGTTTTAAAAGTTTAA
GCAAGTTTTAAAACGTTAATTATAAAGAAAATTCTGTGTGTAAACATATTAGCTAAAGTT
AAAAAGGTATCATCCAGTTTTTCTGTGAACTGGACATTAAAGTAAAAAATGCCACAGGTT
TTTCTTAAAGCATCAACCTGCTCTTTAACAAAAATTATAAAAGGTTAAAAAGAGTCTATA
AAATCTTACCTTATGGTCAAACATGAAAAATTGGATAAATATGTCTCAAGGGTTTATTAA
AATTTCAGTTTAAAATTAATAACACACTAATATAAAGGTAAAATTTAGCTTATCTGGTAT
AAAAATCATACNAGAAACATTATTAAATATNAAATGGGGT
Sequence 2738
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GTCACTGAAACCTCCGCCTACTGGGTTCAAGCAGGTCTCCTGCCTCAGCCTCCCCAGTCG
CTGGGATTACAGGCACATGCCACCACACCTGGCTAATTTTTGTATTTTTAGTAGAGACGG
GGGTCTNACCATGTTGGCCAGGCTGGTCTTGAACTCCTGACCTTAGCTGATCCACCTGCC
CTGGGCTCCCAAAGNGCTGGAATTACAGGCGTGAACCACTGNACCCAGCCCNTTGACCTG
TTNTTTATTATTTTGNGGTTAATGCCAAATNTAAAATAATGTTTATGTATAAAGCCCCAT
NTCACAGGGGGGAANTTTTTTTAAAACAANAATTCCTTTTTTTTTTAAGGAAAAAAAGGTT
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ATTCCTTTTTTTCC
Sequence 2739
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CTGTGGAACCAGCTCTACATCAACATGAAGAGCCTGGTGTNCTGGCACTACTGCATGATT
GACATAGAGAAGATCAGGGCCATGACAATCGCCAAGGTATGTCCTCAGGGCCACTTAGGC
TGCCTGGAGGGAGGGCAGCGCTGCCCCCCGCAGTGCCTGTGTCCAACAGTTCAACCTTCT
TGCTGTGTAGCAGTGCTTTTGTGTCTCGTNAAGCAAGTCAGCTCACCCCTCCTTAGAGGT
TCTGGTCTGTCCAATAGAGAACGGGNGGGATTAGCATATGGCTGATTATGAGAGAAAGAA
GCAATNCTAATTTAGGGTGGCCTGACAAGCAAGCCAGAATTGCCTGTGGAAAAGTTATTG
CACTCCTGTAAGAATTCTGGACCCTATTGCTCCTTTGATGTAATGGAAAGTTAG
Sequence 2740
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TGCTCTGAGACATGGAGGAAGCCAGTGAAGGTGGAGGAAATGATCGTGTGCGGAACCTGC
AAAGTGGGGGTGGGGGGAGTTAANANTATTATCCCCANATTGNGGGGCGGGATCCTGCCC
CGGGGGGAAAACTTTGGAACATCTCCGCAATAAGACAGA
Sequence 2741
GGGCANGGTACCCACTTGGATGACTGGGGAGAAGGGCTGGGCTGCTGCTGGGGAGTAACA
CAGGCCTTGGGGCAGGGTTCAGGAGTTCATTAGTCTGGAGTCCAGATCGCCACCCAGGGC
CCAGCCTGATGTAGTGTTCGCGTTCTCTCAGCGCTGCAGTTTTCCGATAAAGGAGAGGAC
TCCTGTGTGCCAGAGCTCTGAATGGGAGCCTCTTCTCAGTCCAGCCAGGCAGAGGGTGAG
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GGAGCTGCAGAGACCTCCAAAAGGTCTCTTAACTAGTCCTCCAAA
Sequence 2742
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CCTCCCAAAATATTGGAATTATTGGCATGAGTCACCATGCCAGATCAAGAAAATATTTAT
GTATAATTTTATCATACCTCATTGGTCCTAATGTTTTTTTTGCTTGTTTAGGTCCCTTCTA

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GAGATAGGAGAAGAGAGAGATCCCTTTCTCGGGGGAGAGAAATNCAAGCCGTCCCGATCCT
CTTAGGGCTNGGAGGTAAAATCNTTTGATAACTTTGTATTNAAAACTTTGCATCCATAGT·
ATGCTAAGGCNTTNTTTTANCCCAAAAAAATTTTNCCTTAAAAGTTTTTTNGAATTNGCNC
AAAAAGGGCCCCNAANACCCAAGNNAAAGGGNNGGNNCTTTTTTTTT
Sequence 2743
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NNCCNTTNNTNNNAANCCNTNAANNAAAAAAANNCCNNNAAAANNAAAAAAAAAACCCCAA
AANNNNNNTNNNAAAAAAAANCNTNGGNNNAAAAAAAAAAGGGGGGGNGNNANTTTNNNNCCC
CAAAAAAANGGTNNGGGNNGGGAAAAAATTNNTTNNCAANCCANAANTTNANTNCAAAAAN
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AAATTTANTTTAACCCCCCCCCCAA
Sequence 2744
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GCCTCCTGGGTTCACACCATTCTCCTGCCTCAGCCTACTGAGTAGCTGAGACTACAGGCA
CCCGCCACCACGCCCGGCTAATTTTTTGTATTTTTAGNAGAGAGGGCGTTTCACTGTGTT
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TGGGCTTACAGGCGTGAGCCACCACACCCGGCCCAGTCTTGTGTCTTAAATACCATTTCC
ACATTGACACCTCCAGAATATTTATCTCTAAACCTGACCTCCAGAAGGTGCAAGCANATT
GTGTAAACCATGTCTCCACTACACGCCTAAAGGCA
Sequence 2745
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AGTCTGACTTCTCGTTGTCTTCATAATTTTTCATTCGTTGCTTTCTTCATGGACTTGCGGC
TGGGGGAGGATCCCCGCTGGTCGCCGAGCANGCGGGCGGGTAAAGGTAGGCCGCGAGAGC
CAGGTTATNGAGAGGAGAGGAGGC
Sequence 2746
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TCTAACTCCTATTGNGACCAGGTTGCCTAATTGGCCCTTTGGTTTGGGCACCCACTGTCC
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TTCTTCACTCTTGGCTTTGAGAGCCCCTGATGCCCTGCAGTCTTGACTGAGCTTCTAATG
GTTGATCAGACCCTTGAATGTTGAGCTCTTTCCATACTAGACTTGAATATTCTCCTG
Sequence 2747
GGCGGCCGCCCGGGCANGGTACANGACATTTTCAAAGTTGCCAGTGTTACTTTAATTGGA
CTGCCTTCGTAATTCATTGCCTCTGCTTCAACAATGTGCAACTCATCCTTTGCACCAGCC
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NGATAATCTTTGTCGGCCTTTAGTTCACAACCGAAAGATAGTTCTGGGGCCTNAGGGGG
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NTCANACCAGGGGCCCCCGTTTNCCTNGGATCNTTTNATAAAAAAATNGGGGGNCCCCCN
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GGG
Sequence 2748
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TCAAAAAAAAAAAGACTAGAGAATGTCAGGGAACACATGTGTATATTTAAACAACTTCAC
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TTCTANAACTAGTNGNATCCCCCGGCT
Sequence 2749
CCGGGCAGGTACAACATGAGACATGACGCCCTTCGGGACACATGCCTGAGGTAGTGACAA
TCCAACTTTGGAAGAGTGGAAGCCCTAGTTTCAAATTCAAGCATGCTTTGAGTATAAATT
AAGTTTACCTCTTTTTGCACAGCAACATGGCCAATCTTTCCTAAGCTGCTCAGCTTACAA
GAAAAGGAATCATACTGCTAAGAATTCAAACTTCAGCAGTCATAGGTAAAGTAAGGGAAG
TTTTNTAAACCNTATTTTTAGCCCCCNTACCCNGAACCCTNGNAAATTTTNGCNAGGGTT
TTTTTCAATTTTTCNAGGGACAGGTTGGGGTTTCNCTTTAAATCCANAGGGCCTTTGGAA
NACCNTGGAANAAACCAGACCCTTTTAAAAAAGG
Sequence 2750
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ATCCACCCACCTTAGCCTCCCACAGTGCTGGGATTACAGGCATGAGTCACCACACCCGGC
CAGTAGAACTCTTTAAACCTGAAAAATCAGTCAACTTTGCAGACTAGAGGAGGATGTTGA
ACACCTATGTGTGTATTTTTTTTTCTTTACCAACTATGCACCTATTTTTCAGACACCTAAA
AGTAATGTCTGTGAAACAGTGGGTTTTCTTTTT
Sequence 2751
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TTCAATAATTTGTATTAAAATACAAAATCCNATAACAACCAGGAGTTCTTCGGAAGAAAA
AAAAAATCACAAAACAACCCCAACAGTGGTGAAGAACTA
Sequence 2752
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GACTNTAAGACAGACAATGAACCTACTNTTAAGAGAGACAGGGCCAGGCACGGTGGCTCA
CGCCTGTATCCCAGCACTTTGGGAGGCTTNAGGCGG
Sequence 2753
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Sequence 2754
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CCCCCCCGGNGTNTGGGGGGANTTNTNANNNTNCAANTTTATTTTATTNCCCCCCCCCCC
NTCG
Sequence 2755
CGCGGGGGCGGCCGGGAANGGNCCNGGAANGGNAGTCANGCAGGGAGCGTCTGTCCGAAC
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ACAATATGGACCCANCTCTCCTTATATGAGAACGTTATTAGATTCCATTGCTCGTGGAAA

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TAGACTTATTCCTTATGATTGGGAAATTTTACCTAAATCTTCCCTTTCACCCTCTCAGTA
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TCCC

Sequence 2756
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTGGAGNGAAACAGGAGTGCTTTATGGTCTGAGTGGAGTGTTTG
GGAGGAGTNCCTCCCGGNTCCTGCCTTGGGGCTCACCTCCCG

Sequence 2757
CCGCGGTGGCGGCCGAGGTACATCTTCTCCTAAAAACAAGGGTAGAGCCAATGGAAAGTA
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ACTTCCCAAGTGGATTAAAAAGTTAAAACTTACAGCATAACAAAGTATTAGACTTACTGA
GGTGACTTGAATATCTCCTTTTGATTTTCACTCTATTTTTCTTTTCACCCATGGGAAAAT
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TTTCTGTAAACGATTCTGAGGCAAAGGGAAATGACTAGAAGAGGATGAGTAAACAATAAC
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TTTTTGGTCTTTG

Sequence 2758
CTACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAGAGGCCGGTGGGCT
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GACCTTGGCCCAAGCTGCTGACCTCCAGGGTGGGGAGGGAGCTACCCCCAGGAGAAGAGT
CACTCAGACAGCAGTATGAGCAAGCCAGCCAGCAGCTCCGTGCCTGCACCCAGCTCAGGG
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Sequence 2759
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Sequence 2760
CCGCGGTGGCGGCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTCGAATATTNCTTT
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TNTGAAGCCAATCCATTANATGTCAGGAAA

Sequence 2761
AATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTGTAGATGTTCTTTGGTATCTGGGCA
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TTGGAAAGGCTTTCTAGATATTCAGAAGGACCGTAGGTGTTGTGATCTAAGCTGTATCTG
CTTTAGAGGGCACCCGAAGCCCCGTAATGCTCTGGTTCTTGCAGACTTCTGGAGATACTG
CCTTGATGGTCTTGGATAAGATTTGGAAGAATCCTCTGGATTATCAGGCAGAGACTCTTA
TTCTCTTTCCTCACTTTTTCCCAGAGTCTTTCTATGCTGAGCTCTCTGGAGCTGGGGGAG
G

Sequence 2762
TNNCCGCGGTGGCGGCCGAGGTACTGTCCAACCAAAACTTTCCACNGNGAAAATTTTCCT
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CAATGGTCCCTCTATTTCAACACCTTTTTCGGTGACAGTGGCGATTTGAAACTGGAAGAA

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AGCAGAGCATTCAATAATGCCCACGCCTTAAGTCCTTAAATGAAAGGTCAGGTGGAGGTC
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CTC
Sequence 2763
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TTATTACTTTTTTTTTTTTTGAGACAGAGTCTTTGCTCTATCGCCCAGGCTTGGAGTGCAA
TGGCTCGATCTTCAGCTCACTGCAACCTCC
Sequence 2764
GCGGNCGAGGNACAANCNACTTGGGGGGGGCANAAAACCNGCCCCCCCCACGANGAGAAGG
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GGCNNACACNNNGNAANNCCAGNACNNNNGGGGAGGCCGAGGCTNTTTNAAAAAAATTNNT
TTNGAGGGGGGGGGGGCCCCCGN
Sequence 2765
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TNCCT
Sequence 2766
ATAGGGCNAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTACCCTCTGCTTTTGCAAG
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Sequence 2767
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TACATGAGCCCAGACAAAGAACCCAAGAAGCTAAGCTATTNTCTTGTAATACCTNCAACA
TAGGAGGCAAGAAGTGAGGTATTATACAGGTTGAGGAGATA
Sequence 2768
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GCA
Sequence 2769
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TGCCTCGCCCACCATGACAGAATCAGCAGAAATGACCATCCCCACTCAAACAGGTCCTTC
TGGGTCTACCTCACAGGATACCCTTACCTTGGACACACCCACCACAAAGTCCCAGGCAAA
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AGGTCCTGGAGATATGTCATGGCAAAGCTCTCCCTCTTCTGGAAAAT
Sequence 2770
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Sequence 2771
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ACAATAAGGCTCTTGAAAATTGTCATTACTTGTGTTTTCCTATACATTCATCTGTGTGAA
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ACTAC
Sequence 2772
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ATTCTTCACTAGATAATTCCTCATCCTCGTCTGGCAAAGGAGGTTCCTCAGGTGGCTGAG
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CAGTAATTGGTCCAAAAGGTGTGGGCAAATTCATTTTATTCATAAGATGAAGGACCTGTN
CCTGCCCGG
Sequence 2773
CCGCGGTGGCGGCCGAGGTACTCAATGTTTAGCTCCCACTTAGAAGTAAGAACATGCCCA
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AACAANGTGAAACCCTGTCTCTACTAAAAACATAAAAAATTGGCCCGGGTGTGGTGGTGG
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Sequence 2774
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GTGAGTCACCAGAAGTCAAAAAGGTAGCCAGCATTGCAACACAGGATGGATCATGCAACA
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AACAGCACCAAAAGTTAAGTTGGGGCTAAAACTGTTGTGCAGGAAAGATTTCATATAGCA
G
Sequence 2775
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TATTAGTTNNTCTCTATCAATCCATCTTTNATAATNNCCAAAATAGGATAAG
Sequence 2776
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GGCAGCCGCCCNCNNGCCGGNAAAANCAAAGGGGGNCCAAAAAGNCAGGGGGGGGACCCNG
GGCGGGGGGAAAAAAAGGGAAAANCCCCGGCNCCAACCAAAANNNCNANCAACCAAACCA
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GGGGNGGCC
Sequence 2777
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GAGGAAAGCCCGGG
Sequence 2778
ATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTT
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CTCTTCTCATGTTTTTTCCTGCTTTGAAACTCAAGNGNTCTCTTTTACTTAATANATCAA
GATCCAACACTAATTTGACATTAAATCAAGACTCTNTACAAGTNGACTATCNCTAACNGG
CTGGGGGACTTCTGCGGAA
Sequence 2779

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ATTGNAGCTCCCCGCGGTGGCGGCCGAGGTACATTGCTGGCCTTTGCCCAAATTATGCTT
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ACCTNCCNGGGCGGNCGGTCTAGAACTAGT
Sequence 2780
CTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTTTTTTTT
TTTTTTTTTTTTTNTNCCTAACCAGTTCTAACNCAAGTCAATTAGTTTTTCANAAGTCTCT
CTCTTCTCATGTTTTTTCCTGCTTTGAAACTCAAGNGTTNTCTTTTACTTA
Sequence 2781
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NCNGGGGGGAACCACAAGCNAGGGAACCCCGNGAGAANAANANANCNGGGGGANAANNNNGG
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GNNAACGGGGGGCGGNNAANNGNACCANNGGCGNAAAAAAAAAAAGANAAAAAGAGGGCNN
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ANCNCGGGGNCAGAACCCCCCNCANAANGGGGGGGGGGGGGGGGCCCNAGGGGNAAACCCCCA
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Sequence 2782
TCCCCGCGGTGGCGGCCGCCCGGGCAGGTACCATGCCGATCTCTGAGAAGTTNTGTTGCA
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GCTGAGGATCCTTGAAGGAACCTGGTCAGTCTCCGGTTCAGCTTCCGACACCAGAGTGGA
ACCCAGTAAGCACCATCAGGAATGGATTTCACTACAAGTGTGGATAACTCTGATTTTCAA
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TTGAGCCCTTATTTTTCCATCTGCAAAACAATAATGCCTATATGTCTTTGCATATAGATT
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Sequence 2783
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ACCATATTACTCCAGGAACTTCCCTTTTCCCTTGTAAATTCTGTTCCATTTTTGGCCAAA
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Sequence 2784
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Sequence 2785
TTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTT

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GCACAATATCATGCTACCTCTTGGAATCTTTTAAAA
Sequence 2786
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Sequence 2787
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Sequence 2789
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ATTTNNCNNNTTTTTTTTGGNGNNANTAAAAAAAAAGGGTTTTTTTNNTTTTTTAAAA
Sequence 2790
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NNGNNGGGNTTTTTTT

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Sequence 2791
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GTCGGTGTTAAGAGAAATTACTCTCACAAGAGCAGAGGCCTGAAGATTCTTTCTTCTGAA
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CCTATTTTTTGGAGGGCGTTGGG

Sequence 2792
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TTAAGAGCAGTCTTTGGCTGGGCACGGTGGCTCACACCCGNAATCCCAGNACCCTGGGAG
GCCGAGGCAGGCGGATCACCGAGGTCAGGAGATCAAGACCATCTTGGCTAACAGGATGGT
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Sequence 2793
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Sequence 2794
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CAAAGTCCTTGACAATNTGACACCAGCTTTTNTAACCNTATAAGGCCC

Sequence 2795
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Sequence 2796
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Sequence 2797
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GACCTTTTTAAACTCATTTTGAAAAAAGAGGATGAATTGGGGGATAGATCTATAATGTTC
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CAGCCTGACCAACATGGTGAAACCTCATCTCTACCAAAAAAAAAAAAAAAAAAAANGTACC
TGCCCC

Sequence 2798
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Sequence 2800
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Sequence 2802
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Sequence 2803
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Sequence 2804
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Sequence 2810
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Sequence 2812
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Sequence 2813
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Sequence 2814
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Sequence 2815
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CCAAGGAGTCCCACAGAAAAACCTAGGGNNAGACCAA
Sequence 2816
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GCCNNNGNCGGGACCAGNGCCAGGNGGACAGCCAGNGNCCNGGCCAGANGAAAGGCNGCC
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AGGNGGGGGNGGGGAGGA
Sequence 2817
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AAAAAAA
Sequence 2818
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Sequence 2819
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Sequence 2820
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GGAANCNTAAAGTGGNAAANCCTGG
Sequence 2821
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Sequence 2822
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Sequence 2823
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GACACAGTTTGCAGTATAAGACAGGACANAAGAGAACAGAAAAACAAATNCAACTGGAAA
AAAGGGGTGG
Sequence 2824
AGGTACCTTAGAGCAACATGCAAAGCTTCCCTNCTCAGCAATCCCAGGTTGGGGCCCCCT
GTCTTCCTATCGTCCTACCCGTCACAACCACCACTGCAGGCTTCTGATGCTCTGTTTTCC
TCCTCTGTCTCAGTTCAGTTGCTCTGAGTTAGAGAGGAGCTCTCTGGGACTGGAGCAAAT
GACTGCACCGGCCCTCATGGGACTTCCATTTCAGTGGATTCAGGGGAAAGCAGCACGTGT
TTTTGAGAGACCTTGGCAACGCAGGCGACCTTGACGTCGACCAAAANAAGAGAGATTTGG
AATGNTTGTTTACAGCCTCCGGTCAAAAAAAAA
Sequence 2825
TTAGGGCGTTTGGAGCTCCCCGCGGTGGCGGCCGCCCNGTCAGGTACCANNNCTTAGCAN
GGAANNTGGACAACANAAGCTNTAAATCCTCTTGCATCGNCACGNTNAATTTGCACTGAC
CAATCTGTTGGCACAGTAACTGGTTATAAGCTAAATTTCTACATTTTGGCTACAAGTATN
CCAAATNCACCTTTTAAAAAAATCCTATGTNAGATGCCATCTGGTGTTAATGATTTGCACA
CCCCTTAAATTGAAANTATTNCAAATAAATCTNACGGATTTATATANNATNATTAATGNN
TNTATTTTAAAAAGACAATCTGANAATAACACTTCCCCTAATTGTTGTCTTAATAATGAC
CAAGAGCTGNNGAAAAATNATTCACACTGNTACGTCGTTNTGTTGGTTTGCTCACGGGGG
AAGGGGGGTTG

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Sequence 2826
GCGAATTTGGAGCNAAACCNCGGNGGCGGCCGAGGTACTTCGGGGGAGAGNNTNTCCTNCC
NTCATTTTGAACNCCAGCGGCCTCTTCCCCTTCCNGGGGGCTGCTTGCCCTGGGAACNCTG
GCACCTTGGGCTGNGGAAGGCTCTGGAAAGTCCTTCAAAGCTGGAGTCTGTCCTCCTAAG
AAATCTGCCCAGTGCCTTAGANACAAGAAACCTGAGTGCCANAGTGACTGGCAGGGGCCA
AGGGAAAAAAAAAAAAAGTTGCCCTNANCCNTGGGGGGAAAAAAAAAGNGCCCNGGAAACCC
NGGGGGGNCCCCC
Sequence 2827
ACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCGGAACACTTGAGGTCATGAGTCTGA
GACCAGCCTGGCCAATACGGAAAAGCCCCGTCTCTAACAAAAATACAAAAATACAAAAAT
TGGGTGTGGTGGTGTGCACCTGTAGTCCCAGCTACTCAGAAGGCTGAAGTAGGAGAATCG
CTTGAACCTGGGAGGCAGAGATTGCACCACTGCACTCCAGCCTGGGTGACAGAGAGACAC
TCCATCTCAAAAAAAGAAAAGAAAGGAAAAAAAGAAAAGAAAAGAAATGTTGAGGCAAAT
GAATATACAAACACATTTTAGATTAGCATTTGAATTAGTAAACTGCATAAAAAAGATCCA
ACATGAGCTGACATCATCCAATCCATTGAGGGCCCAAATAGAGCAAAAAGGCAGAGGAAG
AGCAAATTC
Sequence 2828
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CTTTGATGAGCTTGATTTTACCTGGGTCACTAATTCCACAGAACCAATGTAGGTGTCTGG
GCGGAGCAAAATATGCTCCAATTGTGTTTTCTTTTGATAGATTCTTTCAACAGACAGTCT
TTTCTTAGCATCTTCATTTTTCTTTATTTTGTTGACTTGCATATTTTCATTTACAGGCTG
CAATGGTGACACTTCCATGGTGACGGTCGTGAAGGGGCTCAAGAACCCTGAAAGCGACTA
AACAGGCAGGACCCCACGAGACCACCCCCGACCAAGCCGNTTCTCCACAGACGCGCGTCC
CCCGCGTACCCGCCCG
Sequence 2829
CCGCGGTGGCGGCCGAGGTACTTTAANTTTTTTTTTTTTTTTTTTTTTATTTTTTTTTTTT
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GGNAANCCCCNNNNNAANNNNNNNTTTTNNGNGGNNNNNCCCNTTNTNAAANAANCGGGG
TNAAAAAAAAAAAAAAAATTTTNGGGGNNATTTTTTNNNGNNNCCCCCTNANCNNGGGGGG
GNNTNTTTNCTNTTTTNANACCCCCGGGGGGGG
Sequence 2830
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CAGTCGGTTGGAGCGAGCATCCCCCAAAGTTCACAATGTGGCCGAGGACTTTGATTGCAC
ATTGTTGTTTTTTTAATAGTCATTCCAAATATGAGATGCATTGTTACAGGAAGTCCCTTG
CCATCCTAAAAGCCACCCCACTTNTNTNTAAGGAGAATGGCCCATTCNTTTCCAAGTTNC
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CCCCCCCCCAAAAACCTTTTTTNNTTTNGNNAANAAAAAANAAAAAAAAATTTTCCCCCCC
CCNCTTTTTTTTTTTTTTTTTTTCACNCCAAAAAAAAAAAAA
Sequence 2831
CCGCGGTGGCGGCCGATGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTAACCCTTTGACTNTTTTTTTAANGCCNCGGGNGGATNTC
NTTGCCCANCTCCCANNAATGTTTGCCCTTNTAANTCTGTTCCACTTTTAGGNGGNAGCC
ACCAGGCCTTANCCATCCCGGGTACCTGGCCGTTTTAAAANNAGGGGGNATCCCCCGGGN
TNNANGAATTTNNAAANTNAAAGCTTNNNNGAAACCNNCCCNCNNTNGNGGGGGGGGGCCC
CGGGCNNNAAATTTTTTTNTTTNNTTNAAANANGGGNAAAAAAANGGNCCCCCTTGGGGNNA
AAAAAAANGNAAAAAANTTTTTTTTTTNTNGGNAAAAAAAATTTTTTTTTCCNNAAAAAAAT
NNCAAAAAAAAAAAANAAANGGGGNGGGAAAAAA
Sequence 2832

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CCGGGCAGGTACAAAGATTCCTCACTGCGTGCTAAGAAAACAGATCCAGGCCGGGCACGG
GGGCTCACACCTATNANCCCAGCACTTTGGAAGGCTGAGGCGGGTGAATCACCTGAGATC
AGGAGTGCGAGACCAGCCTGGCCAACATGGCAAAACCCTGTCTCTACTAAAAACACAAAA
ATTTGCCGGGCATGGTGGCAGATGCCTGTAATCCCAGCTACTTGAGAGGCCAAGGCAAGG
AGAAANTTGCTTTGAACCTGGGGAAGGCCGAANGNTTGCAANTGAGCTTGAAGATTCGGC
AACNAACTTGCACTTTCCAANNCCNTNGGGNTGACNAGGANGATAAGGACCTTCCNTTCT
NCAAAAAAAAAAAAAAAAAAAGGGANAAAAAAAAAAAAAAGGGNTCCCTTTTNGGCCCGGTTT·
TTTANAAACTTAAGTGGGAATTCCCCCCNGGNCCTTGNGNGGGAATTTCGNNTNTNNNAA
AGCTTTTTTCGAATTCCCCGCCCCANCCNTNNGNGGGGGGGGG .
Sequence 2833
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AGATGAAGTTTTGCTCTTGTTGCCCAGGATGGAGTGCAATGGTGCAATCTCAGCTCACTG
CAACCTCCGCCTCCTGGGTTCAAGTGATTCTCCTGCCTCATCCTTCCTAGTAGCTGGGAT
TACAGGTGCCCACCACCACACCCAGCTAATTTTTGTATTTTTAAGTAGAGAATGGGGTTC
ACCATGTTNGGCCAGGCTGGTTTNAAACTCCTGACCTTAAGGNGAANCCCCCTTTGCCTT
NGGCCNCCAAAAAGGGNTNGGNAATNANNAGGGGGGGNNACNCNCCCCCTTNNNCNNANAA
AAAGGGGGNTTTTTTTTNTNTGGGGGGGGGGGAAANATTTTNNAAGGGGGGGGNGCCCCCCC
NNCCCCTNANAAAAAAAAAANAAANCCCCCCCCCCGNGGGGGANNAAAAANNNTTTNTATAAA
ANANTTTTTCCCCCCCCCCCCCNGGGGGGGGGGGGCCCCCCCCCANCTTTTTTTTTTTTTTN
TAGNAAGNGNNNCAANCCCCCCNAAAA
Sequence 2834
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ACCNCANAACCGCAAGANAACGGGNGNAAAAAAAAGGGAAACANANCAGCNGTCCAAAGAA
AACAAAANGNGGGCAAACC
Sequence 2835
GGTGGCGGCCGAGGTACTGATCATGGAACTCTCGGGGAGGAAATGATGTTTTCCTTCTAC
CCATCTTATGTTCATTGGCTGGGGCTCCTGGAACAGAAGACAGATTTACAAAAGAGAAAG
GCACACAAATTTATGTAATATAAGTTTTACATGACATGGGAGCCTTTATAAGGAAATGAC
CCAAGGAAATGGTTAAACCTGAGTGGTTTTGNGTTAGGTTTGATGAGCAATGAAAAGCTA
TGGAGAACTATGATAGGAGGAGTGTGAGCTAAACGCAATGAACTGGGGGAAACT
Sequence 2836
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TTTTTTTTCTCAAAACGGCCTTCCTTAGTCCTGTAAAACCTGGAATGCACATAGTCCTGT
AATGGCCATCCCAGAAGTGAATCTACATGATTATTCAAATTCAAATACCTAANAAAAAAA
ATCACTTGAAGTTNTGCAACTTCCCAAATGCAAATTCCTGANAAAGAAACTTGACTGAGC
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TTGCTCTTGAGTCAAAATGANCCTTTTTTTAAAGTTAAGCCNCTTTTGCCCNTTNGGGGG
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CCNAAAAAANCTNTTTTTTTTTCNAANCCCCCCNNAAAAAAAANNGGNCCCCCCCCCCCCTNG
NNGGGGGGGGGGGGGGGTNTTTTTTNTCCNCCCCCCCCCNCAAAAA
Sequence 2837
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ACCATGTTGGTCAGGCTGGTCTTGACCTCCTGACCTCATGATCCACCGGCTTCGGCCTCC
TGAAGTGCTAGGATTACAGGTGTGAGCCACTGCGCCCAGCCCTGAGAAATAGTTCTTCTA
ATTGTCATCCAGTTTTCATCTGAGTCCTGTTGTTCTTTGGATATGTGCCCTTCCAGAGCA
CAGCAGGGGTTGTTCAAGTCTTCCANAAAAGCAGCTCTTGTTTCTCCTCATGTGGTGGGA
GTGGAGTCAGAGCGTGGCTCAGGCCCCACATTCTCAGCTGTTTGGATCTGGGGACTCGAA
GTTTCTGGTGGTTACTTCTGAAAGTCTTTTCCAGGATAATTATTCTTGCTCGGTTTCTCT
GCATCTCTGACAGGCTGGTTTNCCTGCTTCCCCGCTT
Sequence 2838
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTT

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TTCTTTTTTTCTCTGTGGAAAAAGAAAGAATTTGACTTTATTTAGAAAGTCTACAAAATA
CAGAAGACGATAACTCGCTTGCTGTAAGTCAGGAAATAAATAAATTCTAGGAGCCGGGCA
ATATTTTTTAACTTTTTTTTTGAGACAGGAGTTTGCTATGTTGCCCAGGCTGGAGTGCAGT
GGTGCGATCTCAGCTCACTACAACCTCTGCCTTCTGGGCTTAAGTGATCCTCCTGCCTCA
GCCTCCCAAGTAGCTGGGACTACAGGCATGAGCCACCATGCATGGCTAATTTTTGTATTT
TTTGTAGAGACGGGGTTTCACCATGTTGTCCAGGCTGGTCTCAA

Sequence 2839

AGGTACTTTTTTTCTTTTTTTTTTTTTTTTTTTTGGAGACAGGGTGTTTATCTGTCACCCAGG
CTAGAGTGCAGTGGCGGGATTACTGCTCACTGCAACCTCGACCTCCTGGGCTCAAGTGAT
CCTCCCAGCTCAGCCTTCAAGAGTAGCTGGGACTGCAGACCTGCACCACCACGTCCAGCT
GCCCGGTTAATTTTTTTTCTGTCGGTTTGAAGAGGGGAGAAGGTCTCACTATGTTGCCCAG
GCTTGTCTCAAACTCCCGGGCTCAAGCAATCCTCCCACTGTTGGCGTCCCAAAGTGCTTG
GGGTTACAAGGTGTGAGCCACCACCACACTGGGGCTCTGCTCTGCCTTTCTGAGTTTTGG
GTTTTCTGCTTATGGNGGGGGAGCTTTGTTCCCGTTCTTCCCCACAAAGAACCCAGGGAT
GTGGCACAAGCTTCCCTGCCCGTTTTTCCTTTAACTTCAAGTTGGG

Sequence 2840

CCGGGCAGGTACAACTGGAAACAGCCACCGGAGAGAGAACTGTCTCGCCTTCGCCGGCTT
TACCAGGGTCATCTCCAAGAAGAGAGTGGCCCCCCACCTGAGTCAATGCCCAAGATGCCC
CCTAGAACACCAGCGGAAGCCTCCTCCACTGGGCAGACAGGCCCTCAGAGTGCTCTGTAG
GAGCTGTAGACTGGGAAGAGAGGCCAGGCGTGGTGGCTCACTCCTGTAATCCCAGCACTT
TGGGAAAGCCAAGGTGGGCCTTGATCACTTTGANTCCCAAGGAAGTTTTTGAGACCAGCC
TTNGGCACCATGGTGAAAACCTTTGTCTTTACCAAAAAATACAAAAATTTAGCTGGGTGT
GGTGGTGCACACCTGTAGTCTTAACTATTGGGGGAGGCTAAGGTAGGGATTCACTTTGAT
TCCCAAGGAGGCGGAGGGGTTTTGCANTTGAGTTTGGCANTTCAACACCCCTTGCANTTNC
AGCCTTGGGGTGGACAAGCTTAAAACCCTTTNTTTTCAAAAAAAAAA

Sequence 2841

CTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACCCATGTCAATGGAGTAAT
GCTCCCAGGAGAGTTATGGCTGCTCTGCTATGTCATGCAGGTTGTTAGGGAAGTAGGGGA
AAGCTAGAAGTTACAGGCCTTACCCAGCTCCCATGCAACCCAAAAGGCCAGTCTCACTCC
CACCGTGCCCCACCCTGACAGCACCAAGTTTGTTTCCAGGCAGTGAGTGAGCAGGGCTGA
GAACTTGTCCCAGGCTACCAGCCTGCCAGCTGAGAAAGAAAGCATGGCTTTTGCATCTTT
TTGCCTGTTGAGTCTGCGCACTGGATTTATGCCCTCCCTCGAGTTTTGGCCGGGAGATTC
ACGTTTTGGTTCAAGTGGTTACCAAAGTTTACTTGGGGAGGTTTCCTTTTCCTTTGGGTC
TT

Sequence 2842

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TTTTGTATTTTTAGTAGAGACAGGGTTTCATCATGTTGGCCAGGCTGGTCTCGAATTCCT
GACCTCAGGTGATCCGCCTGCCTTGACCTTCCAAAGTGCTGAAATTACAGGCATGAGCCA
CGATGCCCAGCCTGAGGAACAGATTTCTATATGGCAAATAATAAAGGCAAATAAAAATTA
ATGCTAAAATAGAATGAGGAAAGTATTNTTTTNTTCACCAGAATGGTTGTNANCANAAAT
GNTTTGCACCAGGGTGGNNTTNAAAAAAAACCCCNCNCTTNNATTTTGGGTTNTNCCTGGG
GGGNTNTGGGGNNCATNAAANACCNTTTTANNNTNTTTTTTTNANNNAAAAAAAANTTTT

Sequence 2843

AGGTACTTTAACTTCTTTTTTTTTTTTTTTTTGAGATGAGTTTTGCTCTTGTTGCCCAGACT
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TCCTGCCTCGGCCTCCTGAGTAGCTGGGATTACAGGCATGCATCACTATGCCCAGCTAAG
TTTGTATTTTTAGTAGAGACGGGGTTTCTCCATGTTGGTCAGGTTGGTNTCGAACTCCCG
ACCTCAGGCGATCTGCCCGCCTCGGCCTCCCAAAGNGCTGGGATTACAAGTATGAGCCAC
CGCACCCAGCCTAAGATCCAAGATTCTTATGTTTTCTCTCCTTGCCTTTTGGAACCTGCC
CGGGGCGTGAGCGGCCCGCCGGGCCAGGTACCAACNAGAAACNCAAACACCTTGCNCAGT
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TNGGCTTAAATTTTAA
Sequence 2844
ACCGCGGTGGCGGCCGAGGTACTTTTTTTTNTTNTTTATTTTTTTTATTATTTTTTNTGGG
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AGCCTTCGNCTNCCGGGTATCAAGTGATTCTCCTGCCTCAGCCTCCCNAGTAGCTGGGAT
TACAGGCATGCNTNNACCATGCCCAGCTAATTTTGTATTTTTTAGTANCAAAACCGGGGG
TTTCACCCATATTGGGTCAGGCCTGGTCTCGAACTCCCAGACCTCAAGGGTGGATCCCGC
CCACCCTCGGCCTTTCNCNAAACCTGCTGGGGAATTACCAAGGCCGTTNAAGNCCAACCC
GNCGCCCTNGGCCANGGGGGACCTNATACTTCTTTTTTTAAAAAAAAAAGACATTTTTGTN
GGGGGGCNTCACCACCCNTTATATTTNAAAAATTAGGTTNCCTTGCC
Sequence 2845
CCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTCCTCATCTTTCTTTGATAATGN
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CCCCCTNTCCCCATCGCATCTATTTTTTTGTTTGTTTTNTTTTNTTCCCAAAGAGGGAAAA
ATACCATGGGCTTTANAGGAATCATCGCTCACTGNGGGAACCTTGCCCCCTCCCCAAGCC
ACCCCACTGNGCCCATAAACGTGCTGCCTGTAACCAATTGTTCCTGTTGAATAACAATGC
GAGCTGAGGGGCTTTTTNTGCCTGAGCTGCAAATANATTAGGCTGCTCCCTTTTATGTGN
GCAAANACATTACCCAAAAGC
Sequence 2846
CCGCGGTGGCGGCCGCCCGAGCAGGTACCTCAGAATGTAACTGTATGTGGAGGTCTTTAA
AGCAATGATTAAGTTAAAATAAGGCTATTAGAGTGGGGCCCTAACTCTAAATGACTGGAT
TTATATGAAGGAGCTAGAAGAAGGACAGACACACCAGGGTCCTGTGTGCACAGAGGGACA
ACCATGTGAAGAGGCAGCAAGAGGCCAACTGCAAGCCGAAGAGAGAGGTCTCAGGGGAGA
CCAACCCTGCCAGCACTTTGATCTCAGGCTTCCAGCCCCCAGACCAGTGATAAAATAAAT
TTCTGCTGTTTAAGCCACCCTGTCTGTGGCATTTTGTTCTAGTGGCCCTAGCAA
Sequence 2847
CCNGGGGCGGCCGAGGTACCATNANGCTTGCAGGGGCTGAAGCATGGTTTGTCCANAACC
CCAACCACCAGGTCTATCGNNCTCTTTCTGNCACCTTTTTNCTCTTTTTTTCCTTCTNCCC
TTGCACCTGAGGNCCTGGAAGGCCTTGATGAGGCCCAGCAAACAGGCATTCTCACAGCTG
GGTTTATAGTCTTTGGGCCCCTTACTCAGTATCCTGGGAACCCTGGGCCAGGAAGTTAAC
AGTGGTCAATCANAAANTNCTGAANAAAATCCCCCTCCCCCTG
Sequence 2848
CCCCCCGNGCNGGNNCANNTTTTGGGCNNTTTTTGGGTTTTCAGNANGGTTNGTGGAGNA
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GGGGANGGGGAGGGGCNNNCCCCCANACNNGGAGGNGGAAGGGGAAAGAACGGCNAGGGG
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NAAAGGGGCCNGANGGCGAAGGANGGCNCCCAAGCAGGAGGCGGGGNNGGGGCCGCAACNG
CCCCNAAAAAANGCCCCCGGGGNNNACCCCAAGGGGGGGANGGGGGGNCANAAAAGNNGGGGG
GGAAGGAACNGGGCCNNAGGGNGGCCCCCNGNNAGANGNGNNNNGGCGGAAANCCCANGC
GCCNGGGGGGGNNNANCCAAGGGGGNGGGA
Sequence 2849
GAGATGCAGTCGATTNCATACCTANTGGGTCCCANTCCTNNNTNNGGNCNGTTGNGAAGC
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GTCCATGGCCCATGGGGATGGGGACAATTTGAGTGGG
Sequence 2850
GGCAGGAACTNTTCTTTNNTCTTTTTTTTNTNAAGTNAGNGGTAATTTAAAAAATCTGAAAT
ATAGGCTGGGCGTGGNGGCTTACGCCTGNAATCCCAGCACTTTGGGAGGCTGAAAGTTGG
GGCNGGATTCATCTGAGCTCGGGAGTTCAGGGACCAGCCTGACCAACATAGAGAAACCCC
GNCTCTACTAAAAATACAAAAATTAGCCANGGCGTGGTGNGCACCATGCCTGTAATCCCA

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GCTGTTTCAGGGAAGGCCCNANGCCANGANAAATTTGCNTGGAACCCCGGGGAGGGCCGG
GAANGTTTGTTGGATGGAGCCCCGAAGATCANCCAATTTGNNNANCTNNCAAACTTTTGG
GNTTGAACAAAGAAGCCNAAAAAANTTCCCCAATTCTTTCATNAAAATACAANGAAAACNT
TANANAAAAATTTTTTGAAAAATTAATGGGGACCCCNTGGGAAANGAGGCCCNNTAAAAA
AAAAAAAAAA
Sequence 2851
CNANCGGAAGGGGCCCCNGGGGGGGGGGGGANAAGGGCAAAACCCNGGNCTNAGCAACCAC
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GCGNNCGCACCACNCNNAGCACCAGCGCACCAANACNGCAGACGAGGAAGGAAGCACAAG
CNCCCCACNNNACAAAGGGGGAAACCGAGGCGCGGGNAGCGCGGNCCCGGGGACGGCCGCA
CAAGAACNAGGGGGACCCCCCCGGGCGGCAGGAGNGCCGGNNAGAAGCCAAAACGAANCC
GGCGAACCNGGGAGGGGGGG
Sequence 2852
AGGTACGCGGGGATGCGCAGTCGTGAGTCCTCTTGTCCTTGAGCGTCAACCTTCTTTCCC
TGAAGTGGCTGGGGTTCCTGTTTCCTTCTTTGATTGACAACTTGTGTTAACCCTCGCACA
TCTCTGGGCCAATTTTTGCTTGAAAATGGCAGCTCCCGAGCAGCCGCTTGCGATATCAAG
GGGATGCACGAGCTCCTCCTCGCTTTCCCCGCCTCGGGGCGACCGAACCCTTCTGGTCAG
GCACCTGCCGGCTGAGCTTACTGCTGAGGAGAAAGAGGACTTGCCCGAAGTACCTGCCCG
GGCGGCCGCTCTAGAACTAG
Sequence 2853
CGGNGGCGGCCGCCCGGGNATGGTACCCTCTGTCACGGCTTCCTTTTNCTGGAAAAGGGA
ATTTCCCAACCCCGGGTGAGGCAATGCCCCGCCCTGCTCCGTGGGCTGCACCTGCTGTCT
GTCAAGCCCCAATGAGATGAACCCTGTACGCGGGGGCCTGGGATCTCAAAATGGCGGCCC
CGTGCGGAAACAGCGTNTGGGAGCANNCATGTTGCCTNCTGAACAAAGCCGTTGAAGATG
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NNGCGAACACCAAACGGGAGAATTTCGCCAATATGGATGTGACAGCGGTTCCCATTAAAG
CGGTGATAGGGATTTTT
Sequence 2854
CCGGGCAGGTACGCGGGGTGGGCATTCTGGGTAACAGAGCTATTTACTTCCTGCGGGTGC
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ACGGTGCCGAAGGACCTGCNGGCATCTGCGGGCCTGTTTGCTTGTGTTCGCGTGGTCAAG
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ATCAAAATCGAAACGGNGTCANCTCCGAAGAAGGATGGGTTATTATTGACTTGCACCTTA
GCCTNTTCGCTTTTGCATGGGGATANCCATTTNGCTCATTNATGAAGTTNCCATGTANTG
TACAGGCCTTGGGGNTCNTTTCAAAGGTNTNNNAANCTGCAGNTCCAGTTAAAACCTTT
Sequence 2855
CTTTCATGTGATCTTTGTGGCAGTGGGACAGGAAGTAGGCGCGGGCCCTCAGGTTCTCCC
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TAGCGCCGTCGATCCCAGAGTCCGGGACCCCAAAACCGCAGCTGAAGCCAAGGCCAGCCC
TGACNCGCCCCCGCGTACCTCGGCCGCTCTAGAACTAGTGGGATTCCCCCGGGCTGCAGG
GAATTNGATATCAAGCTTATCTGATACCGACCGACCTTCNAGGGGGGGGGCCCGGTTACCC
AAGCTTTTTTGTTCCCTTATAGTGGAGGGTTTAAATTTGCGCCGCTTGGGC
Sequence 2856
GGGCGATTTGGAGCAAACCCCGGGGGCGGCCGCCCGGNTTGGTACCAAAANTNCAAACNA
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GGANCGCTNGAGNCTGGGAGGCAGAAGTTGCAGNAAGCCGAGATCATGCCACTGCACAAG
CTAGGTGACAGAATGAGACTCTGTCTCAAAAATAATTAAAAAGCCTCTGCCCCAAACTCG
TTAAAAGATTTTATAACCACAACTGCTGNTTCTGNGNAGATGCATCTGCATGCCCAGGAG
CAGTAAATGCAATAAAANCATTTGGNTATACTTTGAACACAAAATAAACGGGTGAGGCTT
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CCCCGGGCCGCANGGAAATCGATA

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Sequence 2857
ACATTAATTTGCGTTTGCGCTCACCTGCCCGCTTTTCCAGTCCGGGGGAAACCTTGNCGTG
CCAGCTTGCATTTAATTGNAATTCGNGCCCAACCGCTGCNGTNGGAGAGGCCGGCTNTTG
CCGTATTTGGGGCGCCTCTTCNCGCTTTNCTCGGCTTCACTTGACTC

Sequence 2858
TACTTAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACTTGTCCTCAGCTTGGG
CTTCTTCCTCCTNCATCACCTGAAACACTGGACCTGGGGGTAGCCCCGCCCCAGCCCTCA
GTCACCCCCACTTCCCACTTGCAGTCTTGTAGCTAGAACTTCTCTAAGCCTATACGTTTC
TGTGGAGTAAATATTGGGATTGGGGGGAAAGAGGGAGCAACGGCCCATAGCCTTGGGGTT
GGACATCTCTAGTGTAGCTGCCACATTGATTTTTCTATAATCACTTGGGGTTTGTACCTG
CCCGGACACATCCAGTAGGCTAAGGGGATGCTTTCCTTTTCTGGGGTTTTTCGGGGGGTT
TTTTGGAGCGGGGAGAGGGATGAANGAGGTGCTCCCCTTAATTTCTTTATTGAGAATGAT
GCCGTGGATACTTGAATTTAAGCANTTGTCACATGGGCAGTGTCCTACCTGGGG

Sequence 2859
AGGGCGATTTGGAGCTCCCCGCGGTGGCGGCCGGGCANNTACTTTGCGGTTTTTGGGACT
TGATTTTNGCAGAGGGATCGGGCACTGAAGGTGCAGTTCTCAAAATCACACCTGNAGGCT
GGCTCCTCGCTGTGGGTATCCAGGTGCTTCTGGAGGTCAATAAGATTCTTGCAGCTGTAG
TCACAACAGTCACATTTAAAGGGCCGGTCCTCACTGTGACGAAAGCGCATGTGGTTGCGG
AGGGAGGAAGGCAGCGGGCAGGTCATGTCACACAGAGGGCACTTATAGTGATTCACATGG
TTGCGCA

Sequence 2860
ATGCGTTGCNGCTCACTGCCCCGCTTTCCAGTCGTGGAAAACNCTGTTCGTGCCCAGCCT
GCATTTAATGGAAATCGGCCAAACCGCCNCCGGGGGAGGAGGGCCGGTTTTGCCGTATTT
GGGGNCGCTTCTTCCCGCTTCCTTCGCTCAACTGGACTTCGCTTGCGGCTNCGGGGTTCG
NTTCCGGGCTTGCTGGGCCGAGGCCGGGTATTTCANCCTTCAACTTCAAAAG

Sequence 2861
CCCTAGGGCGTTTTGGAGCTNCCCCCGGTGGCGGCCGAGGTACTTTTTTTTTTTTTTTTTN
CCCGGAGNTTTNTAANAAGATTTATTTAGCAAAAATACATATAGCCATTATTGCAAGACT
TAAATGAGATGNTAAATGTTCAACCCAATTTTCTTTCCTGGATAAGTTTTTCTTTCATAT
CCCTGTCAGTTTTGAAAACATAATACCAGAAGAAGGGGGGCCCAATTCCACAGAGAGCTC
CCAAGAATGAGTTTCTGGGAGTGAGTCTGAAGTTGAGATAAACCTTTGCTGATCTTGCTT
ACGTTCAATGCATCTGGGCAGCGTCTTTGATGAGCCCTGGCGGTTAGGCTGGTGGCACTG
AAGCAGGCCTCCAGGGTCTCCTGTTTAAGCAGGATTTTAAGGCCAACCCTGC

Sequence 2862
CATCTATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGCCCGGGCAGGTACTTTGGGA
GGCTGACGCAGGAGGACCGCTTGAGCTCAGGAGTTCAAGACCAGCCTGAGCACCATAGTG
AGACCTCATCTCTACTAAAAAAAAAAAATAAAATACCAGGCATGGTAGCATGTGCCTGTAG
TCCCAGCTACTCTAGTCCCAGCTACTTGGGAGGCTGAGGTGAGAGGATCACTTGAGCCCA
GGAGATCGAGGCTGCAGTGAGCCATTATCACGCCACTGCACTCCAGCCTGGGCAACTAAG
CAAGACCCTGTCTCAAAAAAATTTTAAAAAATTTAAAAAATAAGAAAATCCAAGCTAGGT
TGAAATCTGAATGTTGAGCAGNTCAGTGAGGCACAAACTTAGCTTAAGAAAGTCAACCCT
GCCCACTTGCCATTTTGAAGGTTATTACTAGCCAAAATTACN

Sequence 2863
TATAGGGCGAATTGGAGCTCCCCGCGGTGGCGGCCGAGGTACAGAAAATTAGCAAGGAGA
CATTTTCTGCATTGTGAGAAATCAACATAGACACCTTAAAGACCCCTTTGAGAGTGTGGC
TTTTTGAACTTTTCAGATTTTGCTCAGTGACCTGCTAACACTTACGTGAGAGGCTCCAGG
TGTAAATAGAATCTAATGGCAGAATCTGTAAGTGTAAACAAGCATCTTAGGAGTGAGAGA
TCAAGACCACAAAATGTCCAGAGCTATGACCACAGCTATACCTACCCATAAAATACGATA
CTGGAGTAGGGTATTTTTGTCTTTTTTTCTTACCTAAGAGCTAGCTAATCAGGACAGGTGA
TGGCAGGTTCTGGAGCTCTACCAGGGCAGGTCTATTTTCTTTTTT

Sequence 2864

TABLE 1
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AGGTACAGCTCTTCTCTTGTCTTTCTGAGCTCTTACCAGAATTGCCTTCCGTGTCTTTTT
TTTTGGAGATGGAGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCGCAATCTCAGCT
CACTGCAACCTNTGCCTCCCTGGTTCAAGCGATTCTCCTGCCTCAGCCTCCCGAGGGGCT
GGGACTACGGGTGCACGCCACCATGCCTGGCTAATTTTTTGTATTTTAGTAGCGACAGGG
TTTCACTGTGTTGCCCAGGCTGGCCTTGAACTCCTGAGCTCGGGCAATCTGCCCGCCTNA
TTCTCCCAACATGCTAGGATTATAGGCATGAGCCACCACGCCCTGCGGTGTCCATATTTC
TAACAGCAGTCACTTCAGAGCCATCTAGGTTTCTTCTAACATGCACCTAAAAACTCTTTG
GCCTNTACTACCTAGNTNTGAAACCATTTT
Sequence 2865
CGGCCGCCGGGCAGGTACAGNTGCATCANCTGCTCGTAGGACATGTCCAGCAGCTGGTCG
AGGTCCACGCCGCGGTAGGTGAACTTGCGGAAGGTCCGCTTCTTCTTCTGCTCTACTTCT
GCCACCCGCGTACCACGGCTATCCTTATAGCTTTTTAAT
Sequence 2866
CGCCCGGGCAGGTACTTTCCCCTCCCCCAGAAAAGCAGGACTTGCCCGCTAAGGGTGAAG
GACCAAGGCAGGCGTCCCTGAGTGGTCTGACACCTTTGAAACGTGAGTGAATAATCAGAG
AGGTGTCCCTGCAATGATTAAACACCAAGGAAAGGCTGCCTTCCCAGTCTGTGACCAGCG
CCAGAGTTTTGGGTCCACGGATAAAACGTGTCTCGTTTGTCTCTACCAGAAAATGAAAGG
AATTGAAATTAAGAGAAGGGAGAGATTAAAAAAAAAAAAAAGAAAAAAAAAAAGTACCT
Sequence 2867
CCGCGGTGGCGGCNCGCCCGGGCAGGTACTTTCCCCTTCCCCAGAAAAGCGGGACTTGCC
GCTAAGGGTGAAGGACCAAGGCGGGCATCCCTGCATGGTCTGACACCCTTGAAACGTGGG
TGAATAATCAGAGAGGTGTCCCTGCAATGATTAAACAGCAAGGGAAGGCTGCCTTCCCAG
TCCGTGACCAGCGCTGGAGTTTTGGGTCCACAGATAAAACGTGTCTCCTTTGTCTCTACC
AGAAAATGAAAGGAATTGAAACTAANAGAAGGGAGAGATTAAAAAAAAAAAAAGAAAAAAA
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AAGCCTGGGGGTG
Sequence 2868
CCGCGGTGGCGGCCGAGGTACAAATTGTCGTTTTTATTCCTCTTATTGGGATATCATTTT
AAAAACTTTATTGGGTTTTTATTGTTGTTGTTTGATCCCTAACCCTACAAAGAGCCTTCC
TATTCCCCTCGCTGTTGGAGCAAACCATTATACCTTACTTCCAGCAAGCAAAGTGCTTTG
ACTTCTTGCTTCAGTCATCAGCCAGCAAGAGGGAACAAAACTGTTCTTTTGCATTTTGCC
GCTGAGATATGGCATTGCACTGCTTATATGCCAAGCTAATTTATAGCAAGATATTGATCA
AATATAGAAAGTTGATATTCAACCTCACAAGGGCTCTCAAAGTATAATCTTTCTATAGCC
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TACTACCCTTTGCTGGAAGAAACTAAAAATATAGCAAATGCAGAACCACAAACAATTCGA
ATGGGGTAGAAACATTGTAAATATTTACTCTTTGCAAACCCTGGTGGTATTTTATTTTGG
CTTCATTTCAATCATTGAAGTATATTCTTATTGGAAATGTACCTGCCCGGGCGGGCGCTC
TAGAACTAGTG
Sequence 2869
GCGAATTGNAGCTCCCCGCGGTGGCGGCCGAGGTCTAATTTGAATTTGTAATGAGTCTGA
TGGTATATTTCAATTTTTTGCTTTGAGGGACTGGCTGCTACATTGCAGAATATCTTATAT
CCCTGACTGCTTTCCACTAAATGTCAGTGGTGACCCCAATCCAATATTATGACAACTGAA
CATGCTTATGCATCCCTCATGCCTTTATTTTTTATTTTGGGAAATCTTTCAGCTTCAGTT
TTTGCTGATATTTATGTGATTCTTTGTTCTGCAATTCAAATTTCTGGGAGCCAAACAGTC
TCCTTGGTTCAGATTACTGTTTTTTGACTAGAGCTTCTCGCTTCAGATTCTGTCATAAGA
TTATGGCTTAACCTATGGTTGTCCTTTGATTTGGTGCCATATGAAATAAAACATTATTTT
CTATGGCTATGTATTAAGAATTTTGTGCAATTCTGTTTTTTCTTAGAAGGCTGAGGGTGTG
TTGTCAGACACCATGACTGATGTGACAGGTGTATTTTATTATGC

TABLE 1
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Sequence 2870
ATAGGGCGAATTGGACTCCCCGCGGTGGCGGCCGAGTCCTACCCTTTACTTTTTCCCCAA
GACCATCTCAGGGTGGAGCATTCTGTCTAAGAGAAGAAAGATAAGGAGGCTCCCACCCAC
CTCTCCCAAGAGCAGACATTAAACATCTTTGTGCTTTGAAGAGAGTGAATTTGGATAGTC
TTGTGATTCTCAAGACTAACTTCCAGAATTATACTTTAACCCCTTCCAGATATGGTCCGC
CTTTGGCATTGTGTGTACCTGTGATGGGGCGTGTGGTTTCCGGTTGTCTCACCTTTAATT
GTCAACCTCCAGTGTATGACTCTAGAAATATGAGGAAAGCTTTTCAGTTTTTAAAATTG
CCATTTAAATTTAGTCTATTAAAAACAAACCTAGAGGTCTTGGGTTGCAGTTGATTTCAG
AGTATATTAATTTAGTGGGTCCCNAAAGTATTACATNTATTTATATTCTGGAATGAAAAG
G
Sequence 2871
CCGCGGTGGCGGCCGAGGTACTCCTTCGTAAACCATGGAGAGCCAGCCCAATGCACAGCA
GTGGATATCATCTTTCTCAGAGTCCAGTATCACAGAATCACGACTTTGTCCAGCTGCAGG
TGCCTGCAGGTCACACTGGCTAACTACTTCTGTGATGGGCTCTTCTTTCTGAGGTTCTGC
CAACTTGTCTACTACATAGGGTTGATCATCCTGTTCAGGAAATATTTCTTTCATTTGCTC
TGAGCTTAATATTGTAATTTGTATTTGATCTGCTGGGTCTTTGGAGTCAGGACTGGTTTT
ATCAGCAGTTTGATCTTCTGAGGTCTGGTATGTAGTTTGCTGGCCCACAGAACCTTCACG
TGTATTCACAGCCTCAATGCCATAAGGAAACTCTTT

TABLE 1A
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Sequence 2872
CCCTTAGCGTGGTCGCGGCCGANGTACAAGGTGAACCCTGAACATTCTGTGTCAGAAAGC
TAANGAAGTGCCCAGAGAATGATAAATCAATCAAAAGAACAAAGCGACAAGCATGAAAGG
CCAAATATGAGATAATTTGGGAATTTAAAAAATGAACATAATGGATCCGTAACACATTGA
ATTTTTTAAAATTCTTGAGCCTGTAATGATACTGGAGGAAGGAGTCTTTTGTTTAC
Sequence 2873
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGTGGGGATATTTTGTCTCACAGATTG
TAAGAAAGGGGTATGGAAATCCCCAGGCAACAGTGTGCTCCTCAGCTTGCTGAAACAGAC
CAAAGACTATGTTCTAATCAAACCTTCCAGGAATCTCATGGAAATTTCATTTAATGCCTC
TCCAGGCACTTTTCTGAAAGCCCCCACGTTAGGGATGTCTTGGCTAAGACATCTCTCATG
GTATCCACAGCAACCCTGATGAAGCTCATTTCTGGAGAAGAAGAAAGTCTCTCAACACCT
CTGCTAAGTCATCATTCTCCCATNCTCACTGCAGCAGTTCCTGGAATCTCATGAAGGGAA
GCTTGGGACCCACCGCACACCCTNTGCAAATACCTCACAAGTAAACTTGGNAAATGCCG
Sequence 2874
CCCTTAGCGTGGTCGCGGCCGAGGTACAGTCCTAGCCACAGTAGTAATCACCACTGGCCT
GACTGAGCCCTCACCCTTTATACAGTGTCTCCTGCCACCCTCCTGGGAGAGGCTGTTCTC
GGCACAGCTGGCCTGGGGTCACACAGCTGGTAGGTGTAAAGCAGGCATTGGAGTCCAGGT
AGTCTCACTCCGTAGCCTGTCTCTTTAGCCACTGGAAATGTAGAGCAAAGCGAGAATTGT
CCAAAGAGATAAGCTAATAAAGAGGAAAACAGGCTGGGTGCAATGGCTCATGCCTGTAAT
CCCAGCACTTTGGGAGGCCAAGGA
Sequence 2875
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CCACACTCTACAAAGGCAGTCANCTNCNTGACACATTCCGCTTCTGCCTGGTCACCAACT
TGACGATGGACTCCGTGTTGGTCACTGTCAAGGCATTGTTCTCCTCCAATTTGGACCCCA
GCCTGGTGGAGCAAGTCTTTCTAGATAAGACCCTGAATGCCTCATTCCATTGGCTGGGCT
CCACCTACCAGTTGGTGGACATCCATGTGACAAGAAATGGGAGTCATNAGTTTATCAACC
AACAAGCAGCTCCAGCACCCAAGCACTTCTACCTTGAATTTCACCATCACCAACCTACCA
TATTCCCAGGACAAAAAGCCCAGCC
Sequence 2876
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AGATGACAACAGTGGTGGCAATGACACGGCTGCCACTACTTGGAGTGGCCTCGGAGTTTA
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GAGAAAACCTGAGCAAAGGAAAGATGAGACTCAAATGGCAGCACTAAGACCATTTTGCAC
TGGAGTATCAGATATATTTTGAAAAGAAGACTGTAGAGTGACTTTTTGAAAGACATGGGG
GATTAAGCAGGTAAAGAGAAGCTTGAAGTGGTATTTAGAGATGCTACATTTAGTGACTTC
AGAAGGTATAAACTGAAGCAGCAATGTAGATTAATATTCAAGATATGGGGATAAAAGGGT
GACTAAAGTGGGATCCAAAGCAAATGGGTGCCCGAAAAACCANTGAAAGAAGAACTTGAT
GGAGGCTATGATCTAATTTACATTTAAGGGGAATGAGGAAAACCAGTGGGAAGAATTTGC
CACCCTTGAAAAATTAAATACTGGAAGTTCTGACCCAAAGAAATTAGGGTTAAAAAAAAG
AAATTAAAANGCCTTTCTTTTTGGA
Sequence 2877
CCCTTAGCGTGGTCGCGGCCGAGGTACCTCCTTCAGTGAGTTGTTGGCAACTAGGCAGTG
AAATGAGGGAGTGACCGCTCATGGCTCATGAACTTTGCAAGTTGTGCAACTCAACTGTCC
CACCTTGAAAGGGCTCAGGAAGGTAAAGAGTGTTGTTTTGGGACACAGGGATTGTTGCAT
TTAAATCTTTGTGACTGTGGTTTGGTCTCAGACTGGTTTTTCATGCATAAGTTCTTCTTA
CCCTCAGGCATCTGGGATTTTACCTGTTTTTTCTTCCAGTGGTGTGCCCTCTCCGCCACAT
TGTGGAAGCGTGCTTTCTCAATCCTTCAGGAAGAAATTCAAAGACTTTNTTTTTTAA
Sequence 2878
CCCTTAGCGTGGTCGCGGCCGAGGTACATTATTTAGTGTAATGCCTAATGTTAGTCCTCT
TTATAGCATATTTTTATACAATTTCTATTATTTAACAGGCCTTGGGAATTCAAAGATGAAA
TGTGTGTCCCTCAAGTAACTCACTAATCTATTGTTATAAGTAGATTGTAATTCATGAGTG

TABLE 1A
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CTGTAACAGCTATCCTATGACAGCACTGAAGAGGATGTGGACTTCCTAGATGAATATGTA
TTGAGTTGTAGGGGAGTAAGAATTCACCTACCAGTGAACTAGTGGACCTGAAGTGGTATT
CCAGATTG
Sequence 2879
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CCTCTTGAAAGCACAAAAATTAAAACATTGCCATATGTTGAATTTTTAAAAAGCACTTGG
AGTGAGCGAACATTTCCTGATAAATGCCTTTTAGAGATAGGTTCTTGATATTCAGACATC
TGCAGAAATGTTCTGGTTCCCAAAGTCATTTCACTTCGAAATAAAACACAGCTCCTTCAA
ACAGCACTTTTTCCACATAAATCTAAGTTGCCTCTCCCTGTGGACATTCAGAACTGATAG
AACAAACACTACTCTTTTGAATTTGATGGTTCGTGTCCTTTAAAGTGTTTGAGGACCTAT
GCAGAGCCTGTACACTTGGGGTAGTACCTGCCCGGGCGGCCGCTCGAA
Sequence 2880
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AGGTCTCATGGAGGAAAAGCAGTATCTACAATAAGAAAGAGACCCCAAACAGCACTCTAG
ATTTCTTTAAGAGGGATTATATTTCCTCCTTCCTCCCATTCTCCCTTCATTTCTTCCTAC
CTCCCTCTTTTCATCCTCTTCTCCTTTTATCTTTTCATCATTCCTTTCTTAAGCATTTTA
CTTAGTTACTACTATGTTCTAAGCACTG
Sequence 2881
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TGAATAATTACTGTGCATCTCAGAGAATTGTCTTGTGTCTTTCAAATATATTTAGTTGTC
TTTAGCAGTAACTCTTACATGGTTATTTGCATGACTTAATAAACATTTCAATGCCCCCAA
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TAAATTGGAAGCACATCATTTAGTCCT
Sequence 2882
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CAAAGTGACTTGTCCATAACCACAATATTTTTCATTTTCAAATCTCATTTTTATTTCTTA
TGCCACATTGCCTATAATTATACAGCTAACAATTATCCCATGCTCAGAAGAAATAAAACT
GACGTAGTTAGTAATCAGTNATATATCATTCCCTTAAAACAAGTATTGCTGACTTAATAT
GCATAAAACTGCTGTCACATACCAAATATGACCAACAGGTAAAGGGTGAGAACAATTTCA
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AAAGAAAATAGGGAAAATGCCCAGTAGAAGAAATAAACTAAATTATGCAACCTGCCCTTA
AAAAAAAAGGCCTTTTATTGGTATTTCAACCTACCCAGAATT
Sequence 2883
CCCTTAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGCGTGT
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NATCACCATCAACTAAAGTTCAAAATAGACAAACCCTATCCATCCTANCCAGNGATTATT
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ATNAGAGCNACATGTAGGAAAAAGAGATTTACACAGACTNTAAAACATTAACAAAACCAA
GATTTGTATTACCAGAAAAAGAGTTNTTTTGTNTAAGAAACAAAAATAAGNTGNTNTNGG
GAAAAAAAAAAAAAACAGNTGGAAGCTTAAAAGGAAACTTAAGGAAACCTNCCNGAAAGA
AGAATNAAATGNGNGAAATNGAAATAGGGAGAGAAAACTTNAAAGCCCAAAAATAAAAAT
TGAAATGACNCATCNTTTTTNNGGAACCCAAAAAAAAAAAGAAAAAAA
Sequence 2884

TABLE 1A
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CCCTTAGCGTGGTCGCGACCGAGGTACAGCAGGCCTAATGATAAGACAGCCTACCTGGGC
TCCAGCCTGCCTGTAACTGTGTGAACTTAGCAAGTCCTTCACTCAGTCAGACTTTGCTTT
CTACATCTGAAAAAGTCAAAAGAAAGAAAATAAAAACCTCAGCCTACCTCCCTCTCAGGG
TTGTTACAAGGGGGAAAAGAGCATAAAACAGATGCAAGAAGTGCTTCCTTAAAGAGTTCA
ATATGAATTGTTTTTCTGTTTAGGTTATGTTAAATCTATTTCATATTATTAATCCCTTCC
AGATGACACCCATCAAACAAACACCCAAATGGTCCATGTCTGAAAGACCACAGACTTTTC
TTTTGGGAAAAAAAAAAA
Sequence 2885
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTNTTTTTTTTTTTTTTTTTCTTTTTTGAGA
CAGTGTCTCGCACTGTCACCCAGGCTGGAGTGCAGCGGTGTGACAGGCACATGCCACCAT
GCCTGACTAATTTTATCGTTTTCTTTTTTTTTTTCAGGTAGAGATGGGGTTTCACCTTGTT
GTCCAGGCTGGTCTCGAACTCCTGACCTCAGGTGATCCACCTGCCTTGGCCTCCTTACGT
GCTGGGATTACAGGTGTGAGTCACCACGCCCAGCCATTGATCTGTTGCCTCTTACTAGAG
CTTCTTGTTGGATTCCAGTTTTTTCCCACTCTATTTTATTCATTTGTGGCCTTTGGAAAA
TAGATCTGTTCATTTCATTTACCCACCAAAAAAGGATAAGTTCTTACTCTTTGAAATAAA
AATCAAACTCCTTAGTCTGCCTCTGAAATAAAAATC
Sequence 2886
CCCTTAGCGTGGTCGCGGCCGAGGTACCTATTGTATCAGAAAAATGCTAATTAATTTTTT
GCACATAAAGGGCATTTTAAACTTGGTTTTATTCTTTGTGATAAATATGGATGATGAATG
GTAATGTTAAACAGAATTCAAAAGTTATCAGTTTGGCTAGCCAGACACAGTAGTATATGC
CTATAGTCCTAGCTACCCAGGAGGCTGAGGCCAGAGGAGCCCGGAAGTTCACGTTTAGCC
TGGGCAGCATAGTGAGACACTTGTCTTTTATAAAAACAACAGCAAAAAATGATCAGTTTT
GGGGATAAGTAAAGACAAAATGGC
Sequence 2887
CCCTTGGCCGCCCGGGCAGGTACGCGGGGAAAAAAATATTTTTATCTTTTAGAATATCAG
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ACAGAGGCTATTAACTTTTACACTATGTGTAAAGAAACAACTTGAGAGGCAACTTTATTA
TGCAACCACGATCATGAAGGGGATGAATAAACCAACTACTTAGAAAAAAAAGTGCTCTAT
TATCATGGAATGGTTTTCATTGATCCTTTCTTGTATTTCTGGAATCACTAGAACTAATCT
CCAATCTATGCACTGAATTTTTGACATACGATAAAATGCCATGATTTNATTAATGGATTA
AAATACTTGTCTGGAAGTATANCTTTTTTAAATAATTNCAGTGGATGATAATTTNATTGA
CAAGGTGACANACCTAAATTCTGTTTTCNTCCNTGCCTTGCAAAANGAAACTTTTAGGGG
GATTAAAA
Sequence 2888
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AATCANTATATTCTGGGAAAACATAGTAGAAGAATGAATAAATAAATTCCATTGAATTTG
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TCANAAACAGCTGGAGTAGACAGGTCTTCATAGGCTAGCTTGGGAAACCTAATAACTATT
AATAATGAAATTTTAATTATACTCTTGGATTCTAAACAAATGAACACACAGTGATCTTTT
TGACTTGCTGCTTGGTTAT
Sequence 2889
CCCTTAGCGTGGTCGCGGCCGAGGTACTGATTGTTGAACTCCGAGTCACACTCATTATGA
CCTGGGAGGCAGATGTCTAGCCTTCAGCTAATTATGATGGGCAGTATGGAGGAGAGTGTG
AGTCAAACCTTCCATGGAGGAAAAGGAGTGAACACTCAGGGAGACTGGAGCCGTTTAAAA
GGACATGGGGAGGATCTAATCAGGATCTTGAAAATTTAATGTTCTCAAAAGTTATTTCTA
TCAGTCTTAAGTAATAGATGAATTTCTTTTTGCCACTGCAAAGATGATACTGTCTTGATA
ACCATTCTCTATCATCATGCC
Sequence 2890
CCCTTTCGAGCGGCNCGCCCGGGCAGGTACCACCTGACTCAGCTGGGTGCATTTGACCAG
TTTTGCCCCCATCTGTAAATATCCCTCAGTCCCCATGGAGCTGTAGAGGTGAGTGATGAA

TABLE 1A
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GCAGTGACAGCTCTGGGTAGGAACTCAGCTTAATTTCAAGTTCCAGACCCTCTCCATCCT
CAGGTTCTTCTTCTGTAAAATGAAGATCCCTTTGCGGTGAAACGTTTTGCAGCTCTGGAA
TCTGAGGGTGTAGGAGGAGCTACAGAAGAGGGGTATAGGACTCACCTGAATAAAGGTGGC
ATCTGTGATTACTGTGGGCGAGGGTGAGAGGGAAGAGGATACTGACCGCTAAGCCTTGCC
TTCTTAGTCCAAATTTTGGTTGTGCATTAAATATGTCTTAATTTTTTTTTATAACTTAACC
TCACC
Sequence 2891
CCCTTAGCGTGGTCGCGGCCGAGGTACAGAAGGCTAAGTATCGCTAATTTCTATTCAGAG
ACACAGGGACTCTACCCTTGTTCCTGGCTTTATAAAGCTGCTCAGTTCTAATGTGCACTG
CACACAACAGCTGCCAGGGCCACAAACACCCCCAAGCAGACGTTAGGCTCTCAACCCCTA
AGATACAGTTTTCCTCTCAATAGCTCATAAGACTCTGCCCTCTGACGTGAGAAAATAGAA
TTCTGTTGTGCTTTTTAAGTATGCCTATGGCATCTTTTAAAATATACCATATATGATCCA
GTATTTCTTTGTGTTTGGAGTGTGAATCTGCAGGTGAAAGAGTGTGTTCTACACGTGCCC
GATCCATCCTCATTACACAAATTCACCCTCTACTTTAAAACAGGGAATTTGGGCCTTTGA
CAGGAAACAAGCCGGACAGTCATGGGGCCAAGCTGGAATCAAATGTAAATATTTAATTTC
CTCCTGTTAAAAGCAGAGTGGACCCACAGTCCCTTCCAAAGTAA
Sequence 2892
CCCTTTCGAGCGGCCCGCCCGGGCAGGTACCCAACTAGGAATTGGGGCTCAGCAAAGTGC
CCTGGAGGAAGTGATACCCAAGCTGAGAGATGAAGAATAATGAGTGGGGTAGCCAGGGAT
AGGTGAGAGGGAACATCCTCCAGGCAGAAGGAGAAGCAGACACAAGGGAGGGTGTGGCAA
GAGATGAACCTGAAAGGCAGTCTTGGACCATATCAGAGAGGACCTTATAAGCTCATCATG
AAGCTTAAAATGAATCCTTANGTCATTGGACAGCTGTGGAGAAAGAGTTTGTAAGGGGAG
GGAAGTTATATGAATCACAGGAATTTTTTTAAAGGTGGCTATGGTAGTAGTGTGAAAAGAG
AAATGATTAACAGTANGCAAGCTCAGAGAAAGAAGCCCGCCAAGGAGGCTGTCACCATAA
TCCAGCAGAAAGAAGATGGTGGCCTGGACTGGGGAAAGTGACTGTAGGGGATGGAGAGAA
ATGGATGGGCTTGGGAAATGAGAAAGGGATAGGATCCACAGGGCTTAGGATTTGAGTGAA
TAGAAAAGAGAGAGAAAAGTTAAACCAGACC
Sequence 2893
CCCTTAGCGTGGTCGCGGCCGAGGTACCACTGCACTCCAGCCTGGGCGACAAAATGAGAC
CCTGTCTCAAAAGAAAGCCCTCTCCTTAGCTGAGCAGAGGAAGGGAAGGAGTGTGGCTAT
GAGAATATGATTTATGCCATTTTCTGTTTTTAAATCTAGAAGATCTTCTAAGCACAAATA
CAGCTACAATGAAATATTTTACAGACAAAATGTTAATAGACCATATTCTTTGAATTAAAT
TTGTTTTTAATTTTCTCTACACATTTTTTTTTTCCTGGAGTCTCTTAGCTCTAAATATAT
CAATCAGATTTATAATTTTTTTTTACCTGATTCAGATGTCTTACATTTTTATATTAAATGA
ACCTTAAGCATGATTCTTTTGGTAAGCCAGTATGAATGCCAGTGGTTGGGGGGCGGG
Sequence 2894
CCCTTAGTGTGGTCGCGGCCGAGGTACAGTCCACAAAATGGTTTGCTTCTGAAAAAGCAG
TAGTAGTCTTACATCCAANATTATTCCTAAAATAAAGTTTCGACCCACATATATAATGAA
ATTGAAACTGCCTACATTGGCAAAGCCAGAAAGAGAGTAAAAAAGATGGGGTAGGCCAGT
TGCGGTGGCTCATGCCTGTAATCCCAGTACCTGCCCGGGCGGCCGCTCGAAAGGG
Sequence 2895
CCCTTAGCGTGGTCGCGGCCCGAGGTACTGTCTGTGACAAGAGCAAGAAATACATTTTGA
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AGCAGTTCACAATGAACATACTACTACATGTATATATTAAAGATCATAGCCTGCACAATA
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CCAGAATACCAAAGAAGACATAGAAATGGCTAACAAGTATATAAAAACATGCTCAACATC
ACTAATTATCAGAGAAATGCAAATCAAAGCCACAATGAGATATTAAGTCACACCTGACAG
GATCACTATTATCAAAACTACAAAGTCAATACTTATTGGCAAGGATGTANAGAAATTGA
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TTCTGGGTATTTATCCAA

TABLE 1A
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Sequence 2896
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGGA
GACGGGGTNTNACACTGTTGCCCAGGCTGGAGTGCAGTGGTGCAAACATGGCTCACTGCA
GCCTCGACTTCCTGGGTCCAATNAATCCTCCTGCCTNACCTNCAGANTAGCTGGGACTA
CAGGCATGTGTCACCACTCTAGACTAATTAAAAACAAAAAATTGTAGAGACAGTGTCTCG
CCATGTTGTCCAGGCTGGTCTNAAACTCCTGGCAATCCTTNTGCCTTGACCTCCCAATNT
GCTGGGTTACAGGTNNTGAGGAACCTGCCTGGCACCCAGTTTTTTTAAATNAANTTTTCC
TACTGTNCCCAACCAAAATGACTTCTTATGAAGCTTNTCATCANTTAATGAGCTTTATTA
ATGANANCTTCAACACTGGNCAAGGGGGGAAAAAT
Sequence 2897
CCCTTAGCGTGGTCGCGGCCGAGGTACAGGCGTGAGCCACCATGCCCAGCCTGAATCCCC
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TAAGGCTCACTCATGGGACCAAAGGCAAGAAGAAAGGGAGGAGGGTGGTAACCAGATAAA
CTTTGCAACCCCTTTGATAGGACTTTTTGGGTGAGAATTTTTATGAAAAATAATATATAC
TTCTACTATAGATCTGCCTCTAGTTTCAACCTCTAGTTTTAGCACTGATTTTTTCCCCTT
AATTTCCAGAAGCATGATATAATAATCTTTTTCAAAGAAAGTGGG
Sequence 2898
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AGTGATTGAGGAGTAAATGAGAGGTGAAGCAGTGGAGATAATACAGGTTCTGTTTGGAGG
AGACTTGGCAATAAAGGTGAAAAAATAGGATGGATGAGATAGCACTCAGCAATGAAATGT
AACAGAATTGATGCAACACGGGTGAATCTCAAAATCATGCCAAGTGAAAGAAGTATAGTC
CCTATAATCACCTATAGTCCCAATTACTCAGGAGGCTGAGGCAGGAGAACTGCCTGAGGC
CAGGAGTTTAAGACCAGTCTGGGCCAACACAAGCAAGACCCCCATTCTTTTAAAAAAAAT
TAAAAAACATTANCCAGGCATTGGTGTGGTGCCCCCCNTAGTTCCCCAGCTACTCAAGAG
GCTTGGGTTGGGAGGACTACTTNGNNCTCNTGAGTTNAAGACCAGTCTNGGGNAATCAAG
CCAGANCCTNNTTTCTTNAAAAAAAACAANCCATAAACCTT
Sequence 2899
CCCTTCGAGCGGCCGCCCGGGCAGGTACTCCTATCAGTGATGTATGAGAGTTACAGNTGC
TTCACATGTCTGTCAACATTTACACTGTCACTGTTTTTTATATTAGCCATTTTAGCATAT
ATGAAATAACTGATTTTAATTTACATTACATTTCCCTGATTAATGAGTTGAGCACTTTTT
CATATGCTTATTTTTCATTTGTATATCTTTCAAGAAGTGTCTTTCATGTCTTTTCTCATT
TTAAAGTTGGGTGTCTTTTTATTGTAGGTGGTTATTCTTTGTATTTTGAATATAAATCCT
TTTGATAGATTATGCCTATGATTTTTTTAAAGACTCTATGTNTTCACTTATTGGGGATCTT
TCGAAGGAACAAAATTTTTTTTTATAAAAATCCAACTTTTATCAGGTTTTTTTAATNTTAA
TGGNTTTTTATNGACCCTCAAAAGTCACCAATAGGAACATNATTTTTNTTTCCTTANAAA
GTTTTTATGGGTTTTGGG
Sequence 2900
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Sequence 2901
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AAAATAAGAGATGTATATTCCTGAAAATTGCATGTCCTCTGGAGTCTGTTGTCTGGATGG
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Sequence 2902
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TTTCAAAAAATAAAAACATAAACATAAAAAC
Sequence 2903
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GTCTTGGTGATAGGGTGGGG
Sequence 2904
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GGGTNGGGAAGG
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Sequence 2906
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Sequence 2907
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CCAACAAGCAGCTCCAGCACCCAGCACTTCTACCTGAATTTCACCATCACCAACCTACCA
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Sequence 2908

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Sequence 2909

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Sequence 2910

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CCTAGACTTGCACATGAAGTGCATATGTTCATATTTACCCGTTTGGAGATGGGTANGATA
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Sequence 2911

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Sequence 2912

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Sequence 2913

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GGCCTGAGTCATC
Sequence 2914

TABLE 1A
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CCCTTAGCGTGGTCGCGGCCGAGGTACTCACCTGCCACATCCTAATCTCAGCTCCTCTCT
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Sequence 2915
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ATGAGTTGGAAAATAAC
Sequence 2916
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Sequence 2919
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TABLE 1A
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Sequence 2920
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Sequence 2921
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Sequence 2922
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Sequence 2923
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Sequence 2924
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Sequence 2925
· CCCTTAGCGTGGTCGCGGCCGAGGTACAATTTCCACTCTTAAAAATTTACTAAGGTTTGC
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Sequence 2926

TABLE 1A
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Sequence 2927
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Sequence 2928
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Sequence 2929
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CTG
Sequence 2930
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Sequence 2931
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TABLE 1A

Sequence 2933
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Sequence 2934
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CNCCTNACTTTGGAAANACANTAAAACTAGCCATTTAAAAATTAATTCCAATTAATTTGC
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Sequence 2935
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Sequence 2936
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TTGACTTTTATAAGAGAAACACTCANCCTTTTAATTGCTGAANGTCTGGCCCATAGACTA
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Sequence 2937
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Sequence 2939
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TABLE 1A
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ACGAGCATCTAATAGCGACTGCTGCAGAACTGGTGTGGAAAAGGTTTCTATTTTATAAAA
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Sequence 2940
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TTCTTTCTTTTTTTTTTGAGACAGAGTCTCATTTTGTCACCAAGGCTAGAGTGTAGTGGC
TTGATCTCAGCTCACTGCAACCTCCACCTCCCGGGTNCAGGTGATTCTCCTGTCTCCAAG
TAGCTGGGATTACAGGCATGCACCACCACCTCCAGCTCCTTTTTTTTATTTTTAGGT
Sequence 2941
CCCTTTAGCGGCCGCCCGGGCAGGTACAGTTCTGCTCAGAATGCCCTATCTCCTNANTAA
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TTTATGCATTTTGCCCTTGTTTCCATAATTCAGCACCTCCATCATCTCTTCATCACCTCC
ATCAAGATACTTTCACTTCCTTTTAAAAGCAAAGATCTCTATTTAATGTAATGCTTCTCA
GTTTATTATTTACATTTTTATTTTTTCACCATGCTATCATTTTTACTGGGATTGTCACTG
CTTTGGTTAATGCTCTGGTTACAAAGTGGCATTGCTGTGGGGCAGTCAGCTGTAACCC
Sequence 2942
CCCTTAGCGTGGTCGCGGCCGAGGTACAAGGTGATACATTCTAGCCTTCTACAAAGTGCA
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GTTGATAACCTTTCAGACAAGTAAGATGCTTCTGCATCCTATGAGGTATTCCCAAAGCCC
CTCTTTAATCTCCACCATTGTGCATAATTTTGTGATAATGAAGCAGTTATTTTCTTCTCT
TGATAGACATTTTATGAAGGCAGAGACTATGCCACTCTTGCTTACAGTTGTAGCTCCAGC
ATCTAACATGGTGGCTTAACACATAGAAGATGCTCAGTAATTACTTGTTAAATGAATGGG
ATGGGTGGGTGGATATGCCCTAATATGATGCAGCTTGATTATGCTNGAANTCTGGCTGGA
TTAAGACATCATTCCAAGAAGTAAATACCAGTANTCTTTAAACTGTTGCCCTGTATCTTA
CACACCTGAAAGAGACATCTTTCCAAGGGTGATNAAAAAAAAAGGTCATACCCTTTGAAA
AA
Sequence 2943
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GGTATGGGATAAAACGTTCTTGTGCTGCTTGCAAAAGTCTTTGGAATATTCTTTGGGATA
TTTTGGTGCTTAGGAAGTGCTTTTCAGGTTATATTAATATATGCTTAGTCTTCATGCTTT
CAAGTCCTGTGGGACGTTAATGTTAGTCTTTTAAGTTGAGTCCTTTTTGGTTATATTAAG
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AATTAAGTCGGTCAGAATCCTGAA
Sequence 2944
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TGTTATGGACTAAGTAAGAGCTACCTGAGTGAAGAAGGAGGGAAAGGAGACTCCATACAG
AAGAGCTGAGGAATGAGGAGTGTCCTAGGGTAGTCATGGTTTCCTTTTTTTTTTTTATGA
Sequence 2945
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TGATACTGAAAGANTCCCTGTAGAGGAATAGCAACTGGATANGTAAGCNACTGCAGAAAA
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ACNACCNAAATTATAGNACCCCAAGGNACCTTTGGCTTAACCTGCACNCTTAATGGTTNT
NCAAAATTAAAAAAGNGGAAAACCAAGGTTNGGCATTAATTGGTTTTTACNAAAAAATTT

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TTAAAAAAATTTGGGGGGNATATGNAACCAACNANAATTGGTNANCTTAANATAACNNACC
NAAATTNGNTTGGGNGGAAAATTCNCCNTNGAAAATTTTGGGGTAATACCCCTTTGGGGG
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GAAAAAANAACCTTTTGGGGNTTAAAAAAAATT
Sequence 2946

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AGATGAAATGTTTTTGGGGTTTTTTTTTCTACATAATCTGTTGTAATAACTGGTGGGAGAA
AGTGGGTGTATAAACACATTGCTGCAATTAAGTGATGGAGACATGAGTGTTCATTGCACT
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TCTTTT

Sequence 2947

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TTGAATATCATGCCTTAGTATTTGGGCTTTATATAATTTAGTGTGTATATTAATTTCTGC
TCCTGAGCTCTTATAAATGAAACTGCTGGGAGCTGTGCACAAGGCTTAAACTAAAGAAAC
CTCTTAAAGACAGTGTGGATATCACTGAAAGTATTTTGGGGGAAAACTAAATTTTAATGT
AAAAGAGAACAACTTTTAGAAAGAAGAGAACCATAAAAATAAAATGCAGCACTCCTTTGA
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Sequence 2948

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TTTGCTTTAAAATGTTCTCTTTACTCCATTTCCTTAGTTGATATGCTTGAGGCATCTTGT
TGAATCCATCATTTATTCACCCACTCATTCATTTCACATGTATTTGCAGTTGCAAAGCAG
GCAGTAGGAATAAAATTAGGATCAAAATAAGGTAGTAAGTAACGAAATTTGCTGAGTATG
TTCTGAGAGAATAGCTGAATATACATTTCTAAATGGACGACAAATCCATTTGGAAGTCTT
TCTCCTCCTGTTATTTTGGTAA

Sequence 2949

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ATTAAAGTAGCAGTTAGATAATGTTTTGTCATTTAGGTAAAAATTACAAAAGAATCGGCC
GGGCGCGGTGGCTCACGCCTGTAATCCCAGCACTCTGGGAGGCCGAGGCCGGCAGATCAC
CTGANGTCANGAGTTCAAGACCAGCCTGGCCATGGTGAAACCCCGTCTCTACTAAATATA
CCANGAAATTAGTTGGGGCCGTGGTG
Sequence 2950

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CTGTGGTCCTTTAGTGAAATATGGGGAAACCAGCAGGGGACGTAGGTCAGATAGTTTATA
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ACGCCTCAAATGGATGTATTTTAATGGTTT

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Sequence 2951
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AAATAATGCAGTTTTGTAAAAACTTTGGTGAAATTGGAAAATAACCGCACCCCAGTCACC
TTGTTTTTTTGGCTACTACTAAATTGACTCTGATCACATGGAAGTGTAATAATTTTCTTT
AGTGTGAATGCCCTGAGCCATGAGGTAACCCTGTTCTGAAGTGGTTTCCTTGCTTGTAAA
TAAATAATGTTGACATGTAAAGCAGGACCACCAAACTGTAAGTCTTGTAGTAATTTTAAT
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Sequence 2952
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CTCCCTCTTTTCATCCTCTTCTCCTTTTATCTTTTCATCATTCCTTTCTTAAGCATTTTA
CTTAGTTACTACTATG
Sequence 2953
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Sequence 2954
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Sequence 2955
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AGGG
Sequence 2956
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TCTTCAGATAATAAGAAACCAGATACCTA
Sequence 2957

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CATCAACCCCCTTCTTTTGGGTTGGTTGTGTTTTACGCACCTCCTCCTCTTTTCCTCACT
CCACTGGTTTGCAAGTTATACATTTGATTTCTTTTCTTTCAGTGCCATGCTCTGATAAAA
TAAAGGACATTTATTACAGAAAA
Sequence 2958
CCCTTAGCGTGGTCGCGGCCGAGGTACACAAGTCACGATTATACAGTTTAATGAGTAAAC
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CATAAAACCGTGATTTGTAGATTTTAAATCTGAAAAACATTCTCATATGCACCATAAATT
TTGTCACTGTTCTATTTGATTTGCNTATCTCTACAGGTGAATGAATTTGTTTNNTTTGAA
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Sequence 2959
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Sequence 2960
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CTTGTAAGCCANCTTCATATACCTAAAGAAAACATGTGAAAGGCCGGGCACCGATGGCTC
ACTCCTGTAATCCCAGCACTTTGGGAAGACGAGGGGG
Sequence 2961
CCCTTAGCGTGGTCGCGGCCGAGGTACCCACTGATGTCGTCATGGTGGCAAGTCAGTGTT
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TGCAAGGAGGATTTCATTCCTGGGAATTACCTACTTTAATAGCCT
Sequence 2962
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AATCTCTTCTTCTCACAGGGCAGGGCTGAACAGTATCTCCTCCTGGCTGCATCCGAGCCC
ANAAGTCAAAACCTAAGGGGTCCCTGCTTGGCTGGGACAGAGGCCGCANACCTAGGTCCA
GCTNTGACTCGACAGNGGCACATCCCTGTGAAGTAGGGCTTGGGGGCTTCCCATGAACAG
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GGTTCACCTGCCCTGCAAAGTAAGAGCTGCAAAATCA
Sequence 2963
CCCTTAGCGTGGTCGCGGCCGAGGTACCAATGAGGAAGAGAGTTTTGTAAAAGCAAGCAG
GCTGGCTGTCATTAAAAGTTATCTTAAATAACTTGTCGCAGCCCACTCCCACCAGTCCTG
AAAATAGTTCATTCAAGTGGTAAAACAAGACAAGGCAGAGGACGATGTCTCTAACTTCCC
TGATGTGAGATCTAAAGCCCCATTCCTAACTCTTGGTTTTAGAATTGAGGAAAGTGGAAT

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GGTTCAGGGGATGGAAACAACTTTGAGGAACATAAAGAGGGTATTGGGGGTTCATCAATTC
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TCACTTTAATTGNCCNCCCCTGNATTTGATAANGAAAAGTAGTTTTTTTTCTTATTTGACC
NCTNTTTTNGANTGNCTATTNGGAANNCNTTTTATTTTGGGNACTTTTTTGGGGGGTGGG
AAAGGAAAGTTAAATT
Sequence 2964

CCCTTAGCGTGGTCGCGGCCGAGGTACAAAGAAGCTGAGTGATTTGTTGAGGTCCCAGTG
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CCTCTTTCCTCATCTCTCTACTAAAAAACTACAGTGAATAACTTCCACTGTCATCAAATA
GAAACTTTCTGTGCTGGTTTCCCCTACCCCACCTTTCTGTGCTTGATAACAGAAGCTGTT
GGGAGCCCCACCTTCAGTCTTATTTGTCCTTCCTTGCNGGTTTTTCTTTG
Sequence 2965

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ATCCACTCATAAAACTAATATGACAAAGTAGATGGTTCTATAGGTGTTCAATGCATCATC
CTTTCAATTTTCTAAATATTTGAAATTTTCTTAATAAAAAGATAGGGAAACAAAGGTGGC
TTGGAGGAAACAAAAACAAAAACAAAACAAGAAGATCCAGTCTAATGGAAAGATGCAATG
GACTCAGGGATCCTGCAGCCAAAG
Sequence 2966

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TATTTTCCCAGTTTCTGTAGATCACATATAGGAAGTTCTGCATAATCATAGTGATGAAAA
CTCATGTTTAAAAAATCCATATATAATTAGCGTGATACAACACAGCATCTTAACACTGAG
GCTTTAAGTTTTAATAATTCTGTTATTCTCAGTAACACTGAAAGTTGCCTGTGCTCTTTC
TGTCACACAATTGATTCCAATGTATTTTAAAATGTGTTTTTCTGAGTCATTTGTTGCCTT
GTTACTTTTTAAA
Sequence 2967

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GGTGTATCGAATTGNGTTATGAGATAAGCCACTNGCAGGGACTTGAACATTCCATTTTCT
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AANCTATAACATTTTCACGTTGGACTCAAATTTC
Sequence 2968

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TTGCAGCATTTCACTCACTTTAACTGGCCTTTCACCCCTTT
Sequence 2969

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GGCCAAGGCGGGAGGATTGCTTGAGGCTGAAAGTTTGAGACCAGCCTGGGCGACATGATG
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CTCAGCTACTTGGGAGGTTGAGTGGGGAGGATCGTTTGAGCCCAGGAGATTGAGGCTTCA
GTGAG

Sequence 2970
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TTCTGGAAAAATGTTGGAATTGAAAGAAAATGTGGAAAGAGAGTTGAGTGGAAGAAAGAC
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TCACTCCGATAAAAACTTTTAGAGTGGTTCACCTCTCAGTCACATATTTTGTGGTTTTAT
CTACATATACTTGGTTTTTAAGTCCAAAAATATTGGTTGGATTTCTGGTATACCCTACNT
TTGTAAAAAGCATAAACTAGCATTTAAAATTAATCNAATTAATTGCATGTTATTTTTTTT
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Sequence 2971
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TGGGAGAATTGCTTACGACCAGGAGTTTGAGTCCAGCCTGGGCAACATAGCAACACCCCA
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TGAAATTTTATTTATCTTTGTTTCCTTTCAGTTCTTCTTTTGTTTATTGTGATTATCTTT
CATATAACAATGTGCTTAAATAGCTGGTGGTTCTTGATAGGTCACTCAACAAGTGAGCAA
ACTGATGGATCCTGTGTTTTGTGAGCAGTGTTTATTGGCTGTGATAGAGGGTGGGGACCT
AGATGCTTTTAGGGGATCCTCCTGTTATCCATTTCTG

Sequence 2972
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTGGAAGAATGAGATAATTTATTTGGCAAAAT
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CCTTAATGGGGAATCTTTACTTTTTTTTTTTCCAAATTGTGCCTATCACATGATCTTATGG
ATAGATAATGGTTGGTATTCCTGGTGGATTCTTATGNGCAAAAAAAGAGAACTTGATAC
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CTTTTAATTAAAATCCCN

Sequence 2973
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CCAGCCTTACTCCATCTTCTTTACCTAAATCAATCTACTCAGTTTTCAATTCATTCTTGG
ATTAAACTTCAAGTTCTTTAGGGGAAGCCCTTT

Sequence 2974
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTGATCATTCAATGAGAGAATATGTCAAAAAA
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CTTAAAAGTATGAATGGTTTCATATCCTCATTGACAAAGTATTTCTCTGAAAAATTCTAA
GAATAAAAAATCCTACATCTCTGAATAATTACATTCATGACTCAGGGTGAATTAAAGCTT
CACTTTGCCTGGAAAGACGCAAAAGAAACTTGAAGACAAAACAAGAAGCAGATCACAAAG
ACATAAAGTATAGTG

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Sequence 2975
CCCTTAGCGTGGTCGCGGCCGAGGTACACACTTCTGTAACTTAATATGTCATTTGGATAC
CTTTTCTCAAGAAGACTCAAATAAATAATTTTATTATGCCTTAAATATTACCAAGTCAGA
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TATAATTTGTCATTGGTAATTTTGTTGCAGAAATTATTGTGAGAAAATAAATTTTAAAAG
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CAAACTGATTAATTAATGTAATTATGTTAAACTTCTCCAGTTAAAAAAGAGAATATACAC
TGCAAAGCTGAATGTGTATACTACTTGTTGAA
Sequence 2976
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GGTTGAGGTCTTTTCTTTCTAAGGTGTTATTAGACAGCTATAGACATGGACACCAAAACT
NGNCGAGCCTNCGGCATTGTAAAGGCTTGGCTTACCTTCCATCACCCTCAGCAGTTCTGC
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CACTAGGCATGGTNTGCTT
Sequence 2977
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GCGTTTAGGTGTTTTATTGGATATATTGGATTTGNTTATATACCATTATTTT
Sequence 2978
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AAANGGAAAATGAAACCANGGTGGNTGNTGGTGGTTTA
Sequence 2979
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TCGGCCGCGACCACCGCTAAGGGCGAATTCC
Sequence 2980
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TGGAGGGCAGATGCAAGTGGGGTCAACATCCCTGCTGGAGGGCAGATGCAATTTTGGCAA
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TABLE 1A
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CNATCACTCCATAAATGATCGGTTAAAATNAAAAATATAGGCTGGGTACAGCAGCTTATG
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Sequence 2981
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Sequence 2982
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Sequence 2983
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Sequence 2984
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Sequence 2985
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TGCCAACCAACTTAAAATTCCAAAGATATNCAAGACCTGCCCATGGC
Sequence 2986
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TABLE 1A
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ACCAANACCTNTGCTGACCCANAAGCANACAGGTGACCCTTTCACCAAAACTTCAATCAT
CAGTCTTCTCTTTTCTTTTTTTGAAACANAGTCTTGCTCTGTCGCCCATGCTGGAGTGCA
GTGGCGCGATCTCNACTCACTGCAAGCTCTGCCTTCCAAGTTCACGCCATTCTCCTGCCT
CAGCCTCCCGAGTAACTGGGACTACAGGCGCCCGCCACCATGCCCGGCTAATTTTTTGTA
TTTTTCATANANACATGGTTTCACCATGTTAGCCATGATGGTCTCGATCTCCTGACCTCG
TGATCCACATGCCTTGGCCTCCCAAAGTGCTGGGATTACAGGTGTGAGCCACTGCGCCCG
GCTAGTTTTCTC
Sequence 2987
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ACACATGCACGCTTTT
Sequence 2988
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Sequence 2989
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Sequence 2991
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TABLE 1A
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GAGTCAGGGAGAGAAGCCAGGCTTTANAGTCAGATGGCTCTAATCGTGCATCTCACCCTC
TCTGTGTCCCCAAGCTCTCCCTCTGTAAGATGGGGACAATGACAGCACCCACC
Sequence 2992
CCCTTAGCGTGGTCGCGGCCGAGGTACATTGTATACTGCAGTGTCGTCTACATGGCATTG
GACAGGACATAATGTAAAACATAAAAGTGCAATTGTTACACTTACATATGATAGTGAATG
GCAACGTGACCAATTTTTGTCTCAAGTTAAAATACCAAAAACTATTACAGTGTCTACTGG
ATTTATGTCTATATGACAAATCTTGATACTGCATCCACAACATTATTGGCGTGCTTTTTG
CTTTGCTTTTGTGTGCTTTTGTGTGTCTGCCTATTAATACGTCCGCTGCTTTTGTCTGTG
TCTACATACACATCAT
Sequence 2993
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TGGATCTGGGATGCTCTCTGACCAGGTCCTGTTATGAGTTTCCTGTGTTATAATTAAAAA
CCCCAAACTGATTAAGCATGAGAGGATACTTCCTGCTCTCAGATAAATTATTTATTATAT
TCTGTATTATCCTTGTAATTTTTCTGGATATGAATAAATAACAATGTATCTCAGAAAAAC
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CAATAAAAATGCCATTCATGTATCTCATCACACTTTCTATACATTTTGTAGTGATATGTA
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ACCTG
Sequence 2994
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Sequence 2995
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Sequence 2997

TABLE 1A

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GATTATGGCCATCTCTTTTCTTAGAAGGTAGAAGATAGCACCATGCCGATTCGTCGAACT
GTGAATTCTACCCGGGAAACTCC
Sequence 2998
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GCTTTGCTTTTGTGTGCTTTTGTG
Sequence 2999
ACATCTGCACATTGTGCAGGTTAGTTACATATGTATACATGTGCCATGCTGGTGCACTGC
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CANAATTTTAAGTCCAGAGTGCTGGGGAGAAAAANATGGCAGCACTTGANCGGGACTGAA
AAAGT
Sequence 3000
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Sequence 3001
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Sequence 3002
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Sequence 3003
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TABLE 1A
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CAGGGC
Sequence 3005
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Sequence 3006
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Sequence 3008
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Sequence 3009
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